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CANINE PATHOLOGY;

OR,

A DESCRIPTION

OF THE

Diseases of Dogs,

WITH THEIR

CAUSES, SYMPTOMS, AND MODE OF CURE,

Drawn from Twenty Years' extensive Veterinary Practice:

A Philosophical and Practical

TREATISE

ON

THE BREEDING SYSTEM IN GENERAL,

AND

Rearing of Dogs in particular;

A COPIOUS DETAIL OF THE

Rabid Malady;

PRECEDED BY A

CRITICAL INQUIRY INTO THE ORIGIN OF THE DOG,

THE VARIETIES HE IS BRANCHED INTO,

AND HIS

MORAL AND INTELLECTUAL QUALITIES.

SECOND EDITION.

BY DELABERE BLAINE.

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Preface to the Second Edition.

THE CANINE PATHOLOGY is founded on a small work published some years ago, under the title of “*A Domestic Treatise on the Diseases of Horses and Dogs.*” In each of the several editions it passed through, I promised that, at a future period, I would present the public with a more complete and extended work, which should embrace every information connected with *the medical treatment of dogs*, that a long and successful practice thereon had taught me. By the publication of the *Canine Pathology*, I have endeavoured to redeem this pledge: and when it is considered that the whole path I have travelled over has been hitherto unbeaten, and that no authority existed from whence the smallest assistance could be gained, the task may be considered as a laborious one, and that some industry and attention have been displayed in its prosecution.

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This *Second Edition* presents itself with some important additions. The introductory chapter on the Moral Qualities of the Dog has been preceded by an Inquiry into his disputed Origin—a Summary of his Natural History—and an Account of the principal Varieties into which he is branched out; all of which will, I hope, prove not uninteresting or unacceptable to the lovers of the animal in question.

Every member of society owes, both to his friends and to the public, either a direct consistency of conduct, or some statement of the reasons that have occasioned a departure therefrom. Under the guidance of this sentiment, in the former edition, I entered into a detailed account of circumstances which (for the purpose of introducing more important matter) I have now condensed into the few following apologetical facts:—

As it is pretty generally understood that I was regularly educated to the practice of human medicine, so some surprise and inquiry have been excited relative to the motives that influenced my departure from the regular track of my profession, to

stoop, as it is considered, to the medical treatment of such inferior branches of the creation as *Horses and Dogs*. In answer to these inquiries, I have to alledge, that my first motives were, an inherent and powerful attachment to brute animals in general, which early prompted me to study their habits, and take a warm interest in their welfare. This predilection strengthening with my years, engaged me, during the prosecution of my medical studies, to pay particular attention to comparative anatomy, which a residence with the ingenious Dr. HAIGHTON tended to promote. A knowledge that such were my predilections, gained me the notice of the patrons of the Veterinary College; and I was, by them, offered the appointment of Demonstrator and Assistant Anatomical Teacher to the pupils of that Establishment. Here my attention was directed to the *diseases* of animals likewise; and, on my removal from the College, I gave a course of public lectures on the anatomy and physiology of the horse. I continued, for a few years afterwards, to endeavour to extend the knowledge of the veterinary art, at that time but little known, and its importance but little appreciated; and I may enumerate, among the

additions I made to the general stock, an improved method of treatment of foundered Feet in Horses, and a successful remedy for the Distemper in Dogs.

At the pressing solicitation of relations, I however relinquished, for a time, the further pursuit of animal medicine, and recommenced the practice of human surgery; first, privately, and next in the army, where an active scene of service on the Continent increased my experience considerably. Interrupted in this career by the bequest of some property, I afterwards passed some years as a country gentleman, until an improvident management of my resources obliged me, once more, to direct my energies to some useful purpose; but to what, I was for some time undetermined.

The practice of human medicine naturally presented itself foremost to my view; yet it was an unpleasant reflection, that I had lost some years in my start, and that my cotemporaries, having the advantage of early residence, had outstripped me in the race, and established themselves in a professional practice, that it would probably take me some years

to form. While thus irresolute, accidental circumstances drew me into extensive correspondencies on the diseases of animals, and I became, in consequence, irresistibly and almost insensibly drawn into a popular practice on them. Further consideration seemed to point this as a path at once eligible and useful, and one which my former predilections strengthened me in my determination to pursue. In this almost unbeatened track I might hope to reap both fame and emolument; and although the practice of brute medicine must always be considered as subordinate to that of the human, yet the humanity and utility of the pursuit ought ever to gain its professors the meed of honourable distinction. For myself, it is not without pride and self-approbation that I reflect that I am the first person in this, and, perhaps, in any other country, who has reduced to systematic and acknowledged principles the medical treatment of the diseases of that most useful animal, the dog; a treatment founded on a knowledge of his anatomy, animal economy, and long and attentive observation of his morbid appearances.

Regarding myself, therefore, as the very father of

canine medicine, it may be supposed that I could not again witness its disuse without extreme regret. For, though nearly twenty years of unceasing attention to this, and the other branches of brute medicine, might have claimed the indulgences of future ease and repose ; yet they would have been but partially enjoyed by me, unless I had fortunately met with a person fully qualified to continue and extend the humane pursuit I was so long occupied upon. **Mr. W. Youatt** (the gentleman alluded to) was connected with me in the practice of Veterinary Medicine for some years before I retired ; and I can with truth affirm, that his abilities and experience are only equalled by his humanity and attachment to the cause he is engaged in. To him, therefore, I have delegated, with confidence, the further advancement of this new branch of the healing art ; and to his attentions I would earnestly recommend that application may be made, whenever the assistance of an able veterinarian is wanted.

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INTRODUCTION.

THE Dog has, by all naturalists, been assigned a distinguished niche in Nature's scale; and whatever obscurity may seem to hang around his direct origin, yet, were we enabled satisfactorily to trace his history, even as a cultivated animal, we should probably be carried back to the earliest periods of human association¹. Such were the superior powers of mind and body displayed in the predatory habits of the whole canine genus, that man, in his state of primitive simplicity, could not long remain unobservant of them: and it was one of the highest efforts of his intelligence that prompted him to the selection of this particular member of it; whereby he insured to himself a powerful assistant and ally in his meditated conquest over the remainder of the animal world. Neither is it, perhaps, too much to assert,

¹ A reverend author fancifully observes, "That the dog was probably the next object, after woman, that shared the attention or "espoused the cause of mankind."—LASCELLES *on Sporting*.

that, without this aid, man would have found it difficult either to gain or maintain such conquest. This is exemplified in the present situation of those countries where either the dog is not indigenous, or his uses are not known. Here the wretched inhabitants are content to search for casual subsistence from the natural fruits of the earth, the accidental ensnarings of animals less wily than themselves, or the contributions of a receding tide; and even these, wanting the protecting care of the dog, they are frequently forced to share with the wild beasts that surround them.

On attempting a sketch of the natural history of any animal, our first efforts are necessarily directed to its immediate origin; and in this instance it would be peculiarly interesting to be enabled to trace the exact genealogy of one that is now become our constant companion and most faithful friend. Nevertheless, we have to lament the obscurity of the subject is such, that the most distinguished zoologists are totally at variance with regard to it. Most of our eminent naturalists, justly appreciating the importance of the dog, have advocated his claim to a pure originality of formation; others, and those of no mean note, have derived him from *one or other of the members of the genus* to which he belongs; while a third class has considered his origin as altogether spurious, and the effect of the accidental *commixture of other nearly allied animals*. Again, a few of those who allow him all the originality of formation his most zealous partizans could wish, have yet deemed it impossible that the varied scions growing around them can have proceeded from one common stock, but altered by the powerful agencies of climate, habit, food, and domestication, into the vast diversifications of size and form that now distinguish this extensive family. On the contrary, they have

maintained, that the dog was originally formed in such corresponding varieties as fitted him to inhabit the different countries wherein he was placed. To the lover of the animal in question, it will not prove uninteresting if we dedicate a few moments to the examination of this subject: and although the weight of conflicting authorities, and the speciousness of opposed arguments, may prevent our arriving at a conclusion altogether satisfactory, yet the attempt may throw some light on the subject, and, at least, it may enable others to draw their own inferences.

In the zoological arrangement of the great naturalist, SIR CHARLES LINNÉ, the Dog (*canis familiaris*) is the first species of a genus which comprehends animals whose exterior forms and habits are considerably varied, but whose generic characters bear a close resemblance to each other. The animals included, are, the Wolf (*can. lupus*), the Fox (*can. vulpes*), the Jackal (*can. aureus*), and the Hyæna (*can. hyæna*). The characters of the genus are drawn from the number and the incisive formation of the teeth. There are, in front, six pointed conical fore teeth above and below; the laterals being more lobated and longer than the others. The molar or grinding teeth are furnished with pointed prominences, and in the intermediate space between the incisor and molar teeth (which is considerable, from the great length of maxillæ, or jaws, in this genus) is placed on each side, above and below, what is characteristically called a *canine* or *dog tooth*².

² Why these tusk teeth, common to various orders of quadrupeds, and to man also, should be characterized by the generic term *canine*, appears extraordinary. In man, the monkey, the horse, &c. &c. they appear merely formed to preserve that beautiful regularity which is so conspicuous throughout the links of Nature's vast chain; while to

BUFFON, who warmly espoused the originality of the dog, has endeavoured to prove, that all the varieties met with are derived from one common parent, which parent he considers to have been *the Shepherd's Dog (can. domesticus, LIN.)*. To confirm such an opinion, this great but fanciful naturalist should have traced this varied and wide-spread tribe to its direct origin; and, having so done, he should have retraced it back through the several varieties we now witness it under. But, independent of the reasons we have for believing that the shepherd's dog himself has different origins according to the quarter of the globe he is found in, we have more direct proofs that most of the larger breeds of European dogs are descended from the dog called the great Dane; BUFFON's hypothesis, therefore, appears completely without foundation.

Those celebrated zoologists and comparative anatomists, BLUMENBACH and CUVIER (whose systems do not essentially differ from each other, but are both modifications and improvements on the Linnæan arrangement), assign the dog a specific and distinct origin. The former divides the order *feræ* into twelve compartments, of which the genus *canis* occupies the ninth. The latter divides the *feræ* into two lesser orders; in one of these (*carnivora*) he places the canine genus. In addition to the incisive formation of the teeth, these authors draw a generic character from the simplicity and shortness of the canine alimentary track. If the limits of the inquiry would allow, to these advocates for the originality of the dog might be

the elephant, the boar, the dog, and some other quadrupeds, they are long and pointed, they form an advantageous weapon of defence. In these animals they might therefore, with propriety, be called *pugnatory teeth*.

added, an innumerable host of other respectable authorities ; but, contenting myself with these for the present, I shall now turn to those of a contrary opinion, who, though they are less numerous, are yet sufficiently important to merit attention.

Mr. PENNANT, a deservedly esteemed naturalist, in his *British Zoology*, derives the dog from the jackal. Independently of the recorded fact, that these animals had been known to breed together, and produce prolific origin, it did not escape this accurate observer that the teeth of the jackal more nearly resembled those of the dog than those of the wolf or fox ; many of his habits also are so nearly allied to those of the dog, as strongly incline him to consider the dog as nothing more than a reclaimed jackal.

The opinion of PALLAS on this point seems somewhat wavering. In some of his writings he argues that the jackal is unquestionably the source of our dogs ; which conclusion he draws from the similitudes of size and figure, and also from a close resemblance in manner and disposition³. In others, on the contrary⁴, he seems to give the dog altogether a factitious origin, and considers him as not derived from any original stock,

³ Homini facillimæ adsuescit nunquam, uti lupus et vulpes ciecurati, infidi animi signa edens, lususve cruentans ; canes non fugit sed ardentur appetit, cum lisque colludit, ut plane nullum sit dubium cum iisdem generaturum si tentetur experimentum. Vocem desiderii caninæ simillimam habet ; homini cauda eodem modo ab blanditur, et in dorsum provolvi atque manibus demulceri amat. Ipse quoque ululatus ejus, cum latratu canum ejulabundo magnum habet analogiam. Ergo dubium vix esse puto, hominis speciem, in eadem cum lupo aureo climate naturaliter inquilinam, antiquitus hujus catulis cicuratis domesticos sibi educasse canes, quorum naturalis instinctus jam homini, quem feri non multum tiennent, amicus, et in venationem pronus erat.—*Spicil. Zool.* fasc. xi, p. 1, note.

⁴ Mémoir sur la Variation des Animaux.—*Acta Acad. Petrop.* 1780.

but from an accidental union of other animals, as the wolf, fox, and jackal.

GULDENSTÆDT also attributes the origin of the dog to the jackal, whose teeth and cæcum he found exactly like those of the dog, but less like those of the fox, and totally dissimilar to those organs in the wolf and hyæna. The jackal, he observes, waters sideways like the dog⁵; is easily reclaimed from a wild state to own a name, wag his tail, and exhibit a fondness for his master. Jackals hunt also in packs, and it is supposed, from some sounds they utter, that the bark is inherent in their voices. From a few coincidences of personal similitudes, but more particularly from a generalization of recorded facts, relative to the habits and manners of the jackal, some other respectable naturalists have also been led to a similar conclusion with those last quoted.

It may be remarked, that the zoologists of former days laboured under a manifest disadvantage in framing a satisfactory and systematic arrangement of their subject. In the absence of more conclusive evidence, they were forced to resort to the aids of such general operations of nature as had been recorded by unphilosophic travellers, or to a few parallels of exterior resemblance drawn from their own observation. Throughout every page of Nature's history, harmony and uniformity are strikingly apparent: the gradations (of animal life particularly), instead of having their boundaries distinctly marked, slide into each other with scarcely perceptible shades. This uniformity has in itself tended to increase the difficulties of zoological arrangement, and to embarrass the labours of naturalists. Fortunately for those

⁵ “Oderat anum alterius; cohæret copula junctus.”—*Nov. Comment. Petrop.* vol. xx, p. 450, tab. xi.

of the present age, a more extensive knowledge of comparative anatomy greatly assists them in methodising and arranging their subjects; for that which was formerly referred to exterior form only, or an imperfect acquaintance with habits and manners, is now subjected to the scrutiny of internal organization, and to the physiological deductions springing therefrom. Although we must still be content to draw many of our conclusions in the interesting study of natural history from analogy and probability, yet we are principally taught by our observations on the invariable construction of certain parts of the body, of which the bony portions are subject to the fewest variations by all the efforts of art⁶. With these aids, I shall attempt to examine the various opinions detailed above; and I propose to inquire, first, what claim each of the individuals, classed with the dog in the canine genus, as the wolf, fox, and jackal, has to the rank of being his primogenitor and parent. In the next place, I would endeavour to investigate whether it is more probable that his origin is altogether spurious, and derived from prolific intercourse between different members of this genus.

If we attentively examine the Wolf, we shall find that he varies very considerably from the dog, in form, as well as in habits and manners. The whole osteology of his head presents a more angular mass. The auditory

⁶ The bones are not, however, wholly unaffected by a life of art, as we witness in the altered form of those composing the head of the bull-dog, pug, greyhound, and some others. The coccygal bones may also be artificially altered, as is observed in some breeds, particularly of sheep dogs, who are, many of them, born without tails, or with a very short one only. The teeth, however, as parts of the bony structure, may be still implicitly relied on; for these, I believe, under every change of circumstance, remain invariably the same, and become, therefore, our safest criteria.

portions of his temporal bones are placed higher, and more anteriorly in the skull, than those of the dog. The orbitary fossæ are much more inclined, and his teeth are not only proportionally longer and stronger, but they also differ in their general form⁷; his cubitus is longer and more obliquely placed, and his cæcum is very dissimilar. Externally, his form is unlike that of any known breed of dogs: with a tail always pendulous, and a coat always coarse and shaggy; under every variety of climate, he is still a wolf. In habits he is wholly carnivorous and predatory, nor does he ever congregate except under the stimulus of excessive hunger, in the pursuit of prey of stronger powers than his own. Always ferocious, every attempt to reduce him to perfect obedience has proved unsuccessful; cruel, crafty, and suspicious; a tyrant in power, and a coward in jeopardy; he appears to have no latent or hidden tinge of the qualities that so eminently distinguish the dog; and if, as is asserted by naturalists, the female wolf feels oestrus but once a year, and gestates about one hundred days, then the individuality of the dog, as far at least as regards the wolf, is established.

The Fox, attentively viewed, will be found to present

⁷ I am aware the *domesticated* dog can hardly be considered a fair subject for this comparison. A life of art has unquestionably operated considerable changes on his whole frame; and it is equally true, that such wild dogs as have fallen under the examination of comparative anatomists, have all presented a more sharp and pointed visage, a more confined forehead, and ears more erect, than are observable in any of the cultivated breeds. To this I have to remark, that the comparison above alluded to has been made with specimens of such dogs as have never been subjected to a life of art; or with such as, having been only partially so (as the northern breeds), may be supposed to present but little variation from the original, particularly in their bony structure.

lines of distinction, if not altogether so strong, yet sufficiently legible, to separate him *specifically* from the dog. In the anatomical arrangement of his bones, in the approximation of his eyes, and the formation of his cæcum, the same variations occur as in the wolf, but they are less strongly marked. The extreme fetid odour of his urine is one of his strongest characteristics, and accompanies him through all the varieties produced (which, as he is an inhabitant of almost every country, are sufficiently numerous); and is so peculiarly vulpine, that it is not, I believe, imparted even to his bastard progeny⁸. Possessing in every country a marked outline, he cannot be easily mistaken: he is always solitary, never barks, but has a peculiar whine, and, in all the modulations of his voice, he is totally unlike the dog.

That the Jackal is the source from whence the dog is derived, it has already been stated, attempts have been made to prove, by authorities of no mean note; and in candour it must be allowed, that the reasons assigned give this opinion much more weight than that which has traced his genealogy to the wolf or fox. The striking resemblance between the general assemblage of the bones of the two animals, and between their teeth in particular; the similarity of their cæca, and of the whole alimentary canal; are all important and argumentative facts.—There are still, however, sufficient proofs

⁸ If the animal produced between the dog and fox possesses no foetor in his urine, which I believe is the case, it is a strong proof that nature has drawn an inseparable line between their organs.—It is remarkable, that BUFFON should have taken so much pains to prove that the dog will not breed with the fox. The connexion is, I believe, never sought, but it sometimes does occur, and progeny follow.

that these nearly allied members of the same genus are *specifically* distinct animals. The jackal, although he has been found diffused over most parts of the old world⁹, yet he has never become naturalized to the new; and from some attempts to transplant him, it appears that he was not formed to live, like the dog, as an exotic. It may be further observed, that, among the efforts made to reclaim both the Asiatic and African breeds, there are not sufficient authorities to prove that any have succeeded, except in one small variety called the adive, and with him but imperfectly; and although the number and direction of the bones of his skeleton are similar to those of the dog, yet there is a very considerable disproportion between the length of the fore and hinder extremities, which gives to his whole exterior an appearance unlike to that of any race of dogs at present known. These considerations would seem to disprove the origin of the dog from the jackal; and if the account is true (but which I much doubt), that the female jackal gestates only four weeks, the subject receives a decisive confirmation.

Between the *Hyæna* and the dog the lines of distinction are so apparent, that no relationship has ever been attempted to be proved between them.

I have yet to examine upon what authority the opinion rests, that derives the dog from an accidental mixture of such nearly allied animals, as, by engendering, can produce fruitful offspring. The zoologists of the last century were led to regard, as a criterion of spe-

⁹ *Copiosissimum in universo oriente animal.*—PALLAS. It may be also observed, that, were the dog a descendant from the jackal, it is more than probable mixed breeds would be prevalent; but this is never the case.

cies, the capability of copulating together, and of producing thereby progeny that, in their turn, should prove prolific. CAMPER, DAUBENTON, PALLAS, BUFFON, HUNTER, and other celebrated naturalists and physiologists of that time, adopted this criterion: but latter observations have proved that this rule is by no means infallible, and that it is in fact to be but little depended on; for, although hybrid animals for the most part do not prove fruitful, yet it is sufficiently notorious that instances do occur when even prolific offspring are produced between parents of different species. The mule has been known to cover the mare; and, in warm countries, it is not very uncommon for her to produce, by this union, an animal that usually partakes less of the mare than of the mule. In the East, the mule itself has also been known to fecundate. The he-goat and ewe have likewise, by their union, produced prolific young; and, among birds, similar instances are by no means uncommon. From these, and numerous other facts of a similar tendency, we are able analogically to decide, that the capability of the dog to produce fruitful offspring, from sexual intercourse with any other member of the canine genus, cannot be considered as any proof of his being himself derived from such a source.

In addition to what has been advanced, it remains to be added, that native breeds of wild dogs are still found in some parts of the world, all of which present one common character, particularly of the head and face; and which character differs considerably from that of either the wolf, fox, or jackal. Further, it may be remarked, that such dogs as had once been reclaimed and made tame, but which from circumstances had again become wild (however, during their subjugation)

tion, they might have been altered in size and form), had all of them, in their future progeny, been found to travel back towards the form, size, and character of the original wild breeds ; which facts alone seem conclusive, and prove *that the dog has, from the creation, existed as a pure, unmixed, and original animal.*

If I could flatter myself that this cursory view of the matter had satisfied the lover of the dog of his undoubted claim to perfect originality of formation, I might rationally indulge a hope that it would be less difficult to prove that the powerful agencies of habit, food, climate, and domestication, had been of themselves fully sufficient to produce the endless varieties that are met with in this multifarious race ; and that, therefore, it was totally unnecessary to resort to the less rational opinion, that such varieties had been originally formed as were adapted to the spots whereon they have been placed. The effects of climate on the animal frame have occasioned much controversy amongst naturalists and philosophers, some of whom have admitted its powerful controul over the external and even internal organization of the inhabitants existing under it ; others, on the contrary, have argued, that the animal machine is endowed with an inherent capability of maintaining itself in its primitive integrity of form and character under every variety of climate. Adverse as these opinions may seem, the partizans of each have been enabled to bring forward imposing facts in support of it ; neither is it difficult, to a certain degree, to reconcile these seeming discrepancies, and to allow to each theory a considerable portion of truth. It requires no great depth of research, nor any extensive collation of facts, to prove, that to every branch of animated nature there undoubtedly has been imparted an inherent

power of maintaining itself in its original purity of form and character¹⁰, when such animated branch is not subjected to the various physical and moral agencies resulting from change of climate, restraint, and artificial food. But it admits of as ready proof, and it has long been observed by philosophers, that the same agencies, arbitrarily imposed, possess a considerable modifying power over the organization of animal bodies. Of these agents, climate and domestication are the most powerful. Climate, it is well known, has a great influence over all the living bodies placed under it: to its operations on mankind we are to attribute the two opposite extremes of white and black races; while extra-tropical shades, ranging between these, as they approach to or recede from the sun's rays, confirm the assumption. Within the tropics, almost all animal matter is distinguished by the strength and depth of its external hues; whereas a blanching or whitening effect is produced, on the same matter, as it approaches the poles. The Siberian roe, the varying hare, the varieties of grouse and partridge, even the diminutive mouse, and, in fact, almost all the wild animals of high northern latitudes, become lighter as winter approaches;

¹⁰ Mr. LAWRENCE, in his scientific *Lectures on Comparative Anatomy* (to which I am proud to own many obligations), observes, that this inherent tendency to preserve the original form and character " is illustrated by the zoological descriptions of ARISTOTLE, which, " although composed twenty-two centuries ago, yet apply, in all " points, to the individuals of the present time; and also, by all the " works of art handed down to us from antiquity, in the form of " statues, paintings, mummies, &c." It may be added, that, in the human race, a similar tendency is observed. The Jewish or Caucasian face has never altered, although spread over the globe; and the same may be remarked of Gipsies, who are generally considered as descendants from the Egyptians.

while others, as the polar bear, arctic fox, snow bunting, &c. &c., the inhabitants of still more rigorous regions, remain always white. Neither is the effect of climate confined to an alteration in the colouring only of the exterior coverings of its inhabitants; it extends to the organization and texture of them also, admirably adapting them to the circumstances of exposure under which its wearers are placed. In the sterile and inhospitable regions, where ice and snow hold a stern dominion, the quadrupeds are furnished with a short fleecy covering, which is rendered still warmer by either a long and shaggy, or a short and crisp, surtout of strong hair. The feathers of alpine water fowl conceal an immense mass of the warmest down underneath, while the land birds of these regions are feathered down to the very claws. To further exemplify the effects of climate, observe how different are the clothings of the thick-fleeced dog of Baffin's Bay and the naked dog of Barbary; the dense woolly covering of the European sheep, and the thin hair of those inhabiting hot countries. Contrast the glossy tunic of the Arabian stallion with the shaggy coat of the Shetland poney: and further, it may be observed, that where, for the purposes of beauty, nature has bestowed on the beasts of arid climes a long coat or covering, it is commonly observed to be one whose thin and silky texture can neither absorb the solar rays nor confine the animal heat: this may be seen in the lengthened fine hair of the goats, cats, and rabbits of Angora, and other eastern countries. Our domesticated animals are equally under the influence of climate, and, as winter advances, they are seen to change their thin fine hair for one of longer and thicker texture. Our horses in autumn prepare for the coming season, and change their fine summer coat for one thicker and longer; but, under an artificial climate produced by hot stables and

extra clothing, by losing the stimulus of necessity, they retain the same appearance throughout the year. Neither are the coverings of the body the only parts that are subject to the effect of climate; the form and bulk also are equally affected by its operations. By its powerful agency, varieties, the most disproportionate, are produced. Compare the eastern pigmy horse, scarcely thirty inches high, and the diminutive ponies of Shetland: compare these with the stately coach and cart horses of England.—Place together the gigantic urus of Lithuania¹¹; the monstrous bison of America, with his shoulders surmounted by an enormous lump of flesh; the mild zebu of Africa; the musk bull of Arctic regions; the European ox, and the dwarf bull of India, not higher than a young English calf; having so done, the extremes of size and dissimilitudes of form and character will leave us in astonishment at the number and variety of Nature's works.—If we carry on the comparison to sheep and swine, we shall find the effects of climate as apparent on them as on the horse and ox. In Africa, the sheep are found swift, tall, gaunt, and even bold, with a pendulous dewlap. In Turkey, they are seen with a fleshy rump entirely disproportioned to the other parts. In Persia this disproportion is translated to the tail, which is said, in some instances, to weigh fifteen or even twenty pounds. In Iceland, sheep are found with

¹¹ Naturalists differ with regard to the urus, which is considered by the majority of them as the original stock from which our cattle are derived. CUVIER, and some other zoologists, seem disposed to think that neither the urus or bison of the antients, and the aurochs of the Germans, nor indeed any wild species at present found in Asia, can be considered in this light. CUVIER's researches have discovered, as he supposes, the characters of our oxen in certain fossil crania; and thence he concludes that the primary race has been destroyed.—*Des Animaux Fossiles*, v. 4: *Ruminans Foss.* p. 51.

three or more horns; in Wallachia, with two only, but those are long and spiral; and in Kamschatka they have horns of an enormous length, but without being spiral¹². In northern countries, the sheep are diminutive; but in temperate climates they arrive to a great size and weight. In swine, the variations, in size at least, are equally disproportionate. In England, the hog has attained to the proportions of—length, 3 yards 8 inches; height, 4½ feet; weight, 700 lbs. In China, on the contrary, he measures from 18 to 20 inches in height; and in some parts of India he is still smaller. In Piedmont, swine are black; in Bavaria, red; and in Normandy, white: and, as a further proof of the effect of climate on them, it is observed that the breeds originally removed to Cuba are become twice as large as those first taken there.

With these instances before us, we must, by analogy, admit, in its full force, the agency of climate on the dog also, in operating many of those extreme disproportions in size, and variations in form and character, that we meet with or know to exist.

Domestication is a no less important agent in the production of these numerous varieties in the dog. It includes not only the restraint imposed on the animal by man, but man also chooses his food, directs his habits, and even regulates his sexual intercourse. These restraints, judiciously employed, are called *cultivation*; and it is by these that the most important and beneficial

¹² The three-horned sheep (*ovis polycerta*, LIN.), the spiral-horned (*ov. strepsicheros*, LIN.), and the long-horned (*capra ammon*, LIN.), are supposed by some naturalists to be distinct species; nor are they agreed relative to the origin of our domestic breeds: two or three wild kinds have had this honour. Pallas, however, considers the argali, found in the great mountains of Asia, as the original parents.

changes are brought about, not only in the dog, but in all our domestic animals also. It has been already remarked, that the universal and inherent aptitude to retain the original stamp of nature appears to become weakened when animals are subjected to confinement and a life of art. Numerous deviations in size, form, and qualities, seem the necessary consequence of the physical and moral agencies which they become exposed to under these circumstances; and the range of these deviations appears proportioned to the degree of confinement and restraint imposed on them. The cat, who is still predatory, and dependent, in a great degree, on her own exertions for support, differs but little in size and form from the original, and presents but few varieties. The dog, on the contrary, who is wholly subjugated, and whose life may be considered as purely artificial, affords 'variations the most numerous and extensive, in size, form, and general character. These varieties present themselves to us in dissimilitudes so great, in successions so endless, and in combinations so extraordinary, as to appear rather a sportive or capricious operation of nature, than the consequences of fixed and established laws. An original and determinable form is lost in boundless variety: nothing remains permanent but the anatomical arrangement of the internal organs, which appears always the same.

With scions so infinitely varied, it is evident that it becomes difficult to form, altogether, a conclusive opinion relative to the size, form, and character, of the original root from whence they sprang; but by the aids of analogy and probability, and more particularly by an observance of such wild dogs as are still met with, and appear never to have been reclaimed, we are enabled to approach near the truth. All such native wild dogs as have fallen under the notice of travellers

and naturalists, have, I believe, invariably been observed to approach a middling size, and to present a head more pointed, and ears more erect, than those of the domesticated breeds. The fore-quarters are found deep, and the hinder extremities long, but muscular. That such was the original size and form of the dog, when first created, we are further warranted in concluding, from the important fact before stated, that dogs which had accidentally or purposely been left on newly discovered countries, and in consequence again became wild, predatory, and gregarious, had been always observed to degenerate in their progeny towards the same size, form, and character, as distinguished the native wild breeds. The Asiatic or Indian dog, eaten by some sects of the natives, and known in this country under the name of the Chinese dog, is, I am disposed to believe, a very close representative of the original wild dog.

The form and character of the first dogs being lost, in a great measure, in an endless succession of diversified progeny, man has been enabled thereby to select particular *varieties*, either for use or ornament. Many of these are probably the effect of chance; but by far the most important were artificially produced by man himself, who, by regulating the sexual intercourse, and by propagating from such duplicates only as approached a given form, has been enabled to effect the greatest deviations from the original. In some instances, an accidental deformity or variety was seized on and propagated by future selections, till it became permanent, and then it constituted a distinct *breed*¹³. Many at-

¹³ See the article Breeding, where this part of the subject is continued.

tempts have been made to classify these varieties or breeds; but many difficulties have prevented, and will perhaps long prevent, a complete synopsis of the canine race. The obscurity attending the gradual changes that have brought about many of these varieties, and the undetermined outline of many of the breeds themselves, together with the capability of altering them, or of creating new ones, all present obstacles not easily surmounted.

BUFFON¹⁴ has enumerated fourteen varieties of the dog; but, however permanent some of these have remained, the characteristic outlines of others have become faint and indistinct. New breeds have sprung up, or have been brought into notice; and it would be as easy now to enumerate twenty-four, as fourteen varieties.

Dr. CAIUS, an early British writer on natural history, has also left us a synopsis of the dogs common in England¹⁵. His divisions are founded on the habits or uses of the animal. Some breeds that he also notices are now extinct, and their places are supplied by new ones.

Having thus endeavoured to trace back the genealogy of the dog towards its source, I shall now return; and from the first races will endeavour to follow his general diffusion over the world, and to describe the probable causes that have operated in producing the remarkable alterations from the original, and the innumerable varieties we daily observe. In those inhospitable climes where the herbage is unequal to the support of the horse, and where cultivation extends only to satisfy the common wants of its inhabitants, it may be supposed

¹⁴ BUFFON *Hist. Nat.* tom. v.

¹⁵ J. CAIUS de Canibus Britannicus, *Lond.* 1729.

that more than ordinary pains would be taken to select and rear a race of dogs whose size, strength, and courage, should, in a great measure, make up the deficiency. To this source it is probable that we are to look for the breeds inhabiting Newfoundland¹⁶, Kamschatka, Greenland, Iceland, Lapland, Siberia, and Pomerania; all of which bear a strong resemblance to each other. These breeds had for their origin such eastern dogs¹⁷ as had extended themselves northwards; where, being subjected to the effects of climate and altered habits of life, they gradually assumed new characters, and finally presented the varieties now become indigenous and common in those countries. When this enlarged breed had extended itself through the vast wilds of Russia, Denmark, Norway, Sweden, and Germany, it became, by the united effects of climate and cultivation, transformed into a gigantic animal, less rough in its external covering, greatly increased in its speed, and possessed of every requisite for defending its masters from the incursions of the wild and predatory animals that devoured their children and cattle, and even disputed with

¹⁶ *The Newfoundland dog*, now so common with us, was but little known before the middle of the last century. He is hardy, courageous, faithful, and tractable in the extreme. His fondness for the water makes him appear almost amphibious. By his aquatic powers he can dive to great depths, and can remain, without injury, many hours in the water; and he seems never so pleased as when thus employed. This exotic dog, by his great size, superior beauty, and interesting qualities, has nearly banished the old English mastiff. A variety of the Newfoundland dog is sometimes imported, which is smaller and smooth coated; but it is, at the same time, equally expert as a swimmer, and is said to be even a better diver than the rough breed.

¹⁷ We can have no hesitation in considering that the first dogs were found in Asia: history, both sacred and profane, agrees in this.

them the possession of the soil. This dog has been long known by the name of the Large Dane¹⁸. It is more than probable that the selection of the shepherd's dog (*can. domesticus*, LIN.) was cotemporary with the cultivation of the Dane. The pasture dog, as he extended himself, presented also several varieties or distinct breeds¹⁹. BUFFON has erroneously (as I have already attempted to prove) supposed this the parent of most of our dogs; but we have analogy, probability, and historical facts, to prove that most of our large breeds proceed immediately from the Dane. The

¹⁸ *The Dane* is considered as the largest dog known. MARCO PAOLO mentions some he saw as large as asses. They appear to have been originally of a light fawn colour; but they are now seen brindled, and sometimes spotted, striped, or pied, with a dingy brown on the original ground. The dogs of Epirus, so famed for their strength and courage, were of this kind.—ARISTOTLE, lib. iii, c. 21. PLINY also notices them in terms of admiration, lib. viii, c. 40.

¹⁹ *The shepherd's or drover's dog* (*le chien de Berger*, BUFF.) is probably the most generally diffused dog known; and it is but reasonable to suppose he must therefore own different origins. In Africa and America, the varieties of pasture dog are so numerous as to include every size, form, and colour. In Asia and Europe the variations in size and form are also great; but the coat or hair, particularly in Europe, is almost always long and shaggy. In high northern latitudes he is found very tall, robust, and well defended by a coarse thick coat of rough hair. In southern Britain, where the breed is particularly attended to, the shepherd's dog is rather large, and mostly of a black and white colour, with hair either coarse and crisp, or more long and shaggy. These dogs have invariably short tails, from being tailed soon after they are pupped: such is the force of habit, and so long has this been practised, that some breeds are now actually pupped without tails. The pasture dog of Scotland is a distinct breed from that of England: it is small, but extremely active and sagacious. Indeed, so great is the intelligence displayed by the whole tribe of sheep dogs, when attending flocks and herds, that we cannot observe them without surprise and admiration.

great Boar Hound of Germany was probably the first fruits of successful cultivation practised on the Dane. The Northerns, having obtained such an accession of power by the assistance of the Danish dog, became, at length, the aggressors, and in their turn hunted the wild beasts, as bears, wolves, &c. from their fastnesses. Effectually to do this, it was necessary to cultivate a breed, that, with the size and strength of the Dane, should have the hardihood of the rough-coated Alpine dog, and a degree of speed beyond either, that he might thereby be enabled to overtake the swift retreat of the wolf, boar, and fox²⁰. By the adoption of slender specimens to breed from; by subjecting these to extraordinary care; and by continually selecting as parents such as shewed the greatest tendency to light-

²⁰ Specimens of the *Boar Hound* are still preserved in Germany; and I have met with a few in Ireland and Scotland also. In Ireland they are called Irish Greyhounds (*cun. graius Hibernicus*, RAY). Those I saw were majestically large, and symmetrically proportioned for strength and speed. Their coats were rough, wiry, and of a light gray colour, rather inclining to yellow. The few Scottish specimens I have seen were rather a strong, coarse, long-haired greyhound, than the real wolf-dog; but it is probable that in the northern parts of the highlands more perfect specimens exist than those I saw. The German boar-hound is commonly described as being of a cinnamon or fawn colour, and as remarkably mild, generous, and faithful, although most formidable to his enemies. The original breeds were not all of them long-coated: on the contrary, I believe that the greater number were sleek and smooth; but the hair, though short, was strong and thick.—It may be remarked here, that it is not easy to conjecture what dog BUFFON means by *Le Matin*. Many naturalists, who follow the synopsis of this author, consider it as the Dane; others place the boar-hound under this term. His own account is, however, at variance with both these: “*Le matin transporté au nord est devenu grand Danois, et transporté au midi est devenu levrier: les grands levriers viennent du Levant.*”—BUFFON, *Hist. Nat.* tom. v. 227.

ness of form, with length of limbs, the boar-hound was gradually cultivated into the greyhound (*canis graius, Lin.*)²¹, which was at first a strong robust animal, with

"*The Greyhound* (BUFFON's *Levrier*) occupies at present a prominent rank in the scale of British dogs; and that it has long done so, we have undoubted proofs. As early as the time of King Canute, the forest laws directed that no person under the degree of a gentleman should keep a dog of this kind; and a very old Welch proverb, still current, reports, "that a gentleman may be known by his horse, his hawk, and his greyhound." At the feet of many monuments, and in the portraits of many distinguished personages, a greyhound is sculptured or pourtrayed as the favoured companion of the deceased. The greyhound race is a very generally diffused one; and it is, therefore, probable that the various breeds are not all descended from one stock. The breeds found in southern countries we should suppose are descended from some cultivated Asiatic dogs: the northern, we have every reason to believe, are the immediate descendants of the boar-hound. Like other branches of the canine race, the greyhound has accommodated himself to external circumstances; he, therefore, presents very different appearances under different climates. In Turkey, we have the authority of Mr. DAL-LAWAY for asserting that the greyhounds are large and white, with their legs and tails fantastically stained with red. In Laconia, they are, according to Mr. HOBHOUSE, also large, and their hair long*. The long-haired greyhound is by no means confined to northern climates; neither are long external coverings of hair among other domestic animals uncommon in the warmest countries, as we see in the cats, rabbits, and goats of Angora; but the hair so seen, however long, possesses a silky fineness of texture, and does not retain animal heat as the thick, coarse, wiry hair of northern animals. Thus, many other of the greyhounds of the east, although delicately fine in their limbs, have long silk-like coats. The elegant animal called the Persian greyhound, to the utmost lightness of form and smoothness of body adds the peculiarity of having his ears, legs, and tail, befringed with very long fine hair, like that of the setter or spaniel. In temperate climes, but particularly in England, where the cultivation of the greyhound is carried to the highest perfection, he pre-

* *Treatise on Greyhounds*, 2d edit. p. 6.

stout limbs, and generally a long coat. Such breeds are still seen in the northern parts of Europe. In some parts of Ireland, and in the Highlands of Scotland also, (besides a few specimens of real boar-hound) greyhounds of this kind are by no means uncommon. In early times, the greyhound (partaking of the qualities of the originals from whence he sprang) hunted as well by scent as by sight; and with these united qualifications he must have been very destructive to the larger kinds of game, as deer, antelopes, wild goats, foxes, &c. Such a dog was the Gaze-hound, of whose extraordinary powers of vision, in selecting and keeping his game in view, we have numerous accounts. But, as the exertions of greyhounds became, by degrees, principally confined to the chase of animals of extreme speed, par-

sents the most symmetric model of an animal formed for speed and beauty combined, that it is possible to conceive. BUFFON conjectures that their original colour was cinnamon or fawn-like: “*Ils sont de couleur fauve-clair pour la plupart.*” The greyhounds of former times appear to have been remarkable for their fidelity and the warmth of their attachment; and these properties are still apparent in the rough coarse kinds: but in our improved breed, every quality seems absorbed in the acquisition of extreme speed: so true it is, that an extraordinary degree of excellence in one particular commonly proves a hindrance to superiority in others; by which wise provision, a great degree of equality is maintained throughout Nature’s works.

For a more full account of this important variety of the canine race, I would recommend the reader to a *Treatise on Greyhounds*, attributed to Sir Wm. C——, a Baronet of sporting celebrity. In this elegant and classic production will be found a fund of interesting and instructive matter relative to the breeding, rearing, and treatment of these dogs. According to the modesty of its author, it is besprinkled with “*a few classical flowers;*” but the reader will find it a gay parterre, where literature and sporting change hands at every turn.

ticularly of the hare, so it became likewise necessary to prevent them having recourse to smelling, or scenting their game, the very action of which retarded their progress; and thus the quality of hunting by scent was gradually lost for want of exercising it.—It will now be necessary to return to the Dane, the cultivation of whose progeny produced other important varieties beside the boar-hound and greyhound. One of the first of these was the Mastiff (*can. molossus*, LIN.), which is known to be a dog of great antiquity: he was formerly, also, of considerable importance among British animals²². Descended immediately from the Dane, was the Dalmatian or Spotted Coach-dog²³. From all these, there gradual-

²² *The Mastiff*, or *dogue* of BUFFON, is unquestionably derived from the Dane, probably from the accidental deformity of a stunted or rickety specimen, which peculiarity had afterwards been continued and cultivated. The breed of mastiffs was, in “olden times,” an important branch of British commerce. When this island was under the Roman yoke, these dogs were in such request, that an officer was appointed, under the name of Procurator Synegii, to superintend the breeding and transmitting them to the Roman Amphitheatre. STRABO tells us that these dogs have been trained to war, and were used by the Gauls against their adversaries. The bull-dog undoubtedly owes its origin to the mastiff. A very useful mongrel is also derived from it, which is still seen about farm-houses, and is known, in the older accounts of dogs, under the name of *ban-dog*: but the mastiff itself is now seldom seen, having given place to the more beautiful, but certainly not more trustworthy, breed from Newfoundland.

²³ *The Dalmatian*, or *Spotted Coach-dog*, is called by BUFFON *Le Braque de Bengal*, or Bengal harrier. This application of term appears extraordinary, when we consider that this breed is not naturally given to hunt; and likewise that no such dog is common in India. The Dalmatian is evidently a smaller variety of the Dane, which he resembles in form and habits. Having a sleek, smooth, milk-white coat, regularly interspersed with black spots, and great symmetry of proportion, he forms an elegant appendage to the carriages of the wealthy, and an useful guard to the stable.

ly were produced, by means of accidental variety or purposed selection, the several breeds of Stag-hound, Blood-hound, old English Harrier (*can. sagax*, LIN.), Fox-hound, common Harrier, and Beagle; with numerous varieties of the hound kind used in the chase throughout Europe and other countries. The selection and cultivation of the Pointer (*can. avicularis*, LIN.²⁴) followed these; and about the same time, probably, the Bull-dog first appeared, whose origin, it is not unlikely, was derived from particularly small but sturdy specimens of the mastiff²⁵.

²⁴ *The Pointer*, it is supposed, was first cultivated in Germany and Spain: he was originally a strong heavy dog, but of great sagacity. The pointer of Russia appears a distinct breed, and betrays, in strong characters, his immediate origin from the early northern races: neither are his general characters, nor his habits, like the southern pointers. The property of *stopping* in pointers in general, as soon as either the sight or scent of those animals (and of those only) we call game arrests the attention, is wholly *a cultivated quality*, founded on a natural one inherent in all dogs. Every dog instinctively crouches, or intently *points*, towards the object on which he meditates an attack. By this means he lessens his bulk to deceive his adversary or surprise his prey; or he arrests his attention for the same purposes. In this way, it is not unusual to witness two complete mongrels making a perfectly steady *point* at each other. As this property is common to all, the introduction of the pointer was probably a chance selection from among the early dogs accustomed to hunt. *The Setter* is altogether a dog of different origin, being only a more highly cultivated spaniel.

²⁵ I confess myself totally at a loss from whence to derive the origin of the *Pug Dog*. A hasty view might lead one to consider him as descended from a dwarf breed of bull-dogs; but closer inspection shews many variations from the bull-dog in the external form. Well-formed pugs are seldom under-hung; bull-dogs are always so: the colours also vary considerably; and, above all, the bull-dog draws an essential character from the fine taper of his tail, while the pug is no less prized from his tail being of equal thickness throughout, and locked up in a compact curl.

The Large Rough Terrier, the Barbet, and the whole race of Water Spaniels (*can. avarius aquaticus*, LIN.), owe their origin to such northern dogs as, being stationed along the shores of seas, lakes, or rivers, possessed, either hereditarily or contracted by climate, a thick rough covering of hair, and by habit a great aptitude for the water.

While the Asiatic dog was extending his progeny through the northern regions into the varieties we have enumerated, the southern climes were also furnishing from the same source, but probably by another track. Here, likewise, the effect of climate became apparent, in the production of an equal number of varieties; but all of them proved less hardy in their nature, and of a more delicate frame; and furnished with coverings, many of which were long and of silk-like texture, others were glossy and smooth, while some, like the naked dog of Barbary, were seen wholly without hair. From these are derived the Eastern Greyhound, most of the hounds used in Africa and South America, the Southern Pasture Dog, the Land Spaniel²⁶, the Set-

²⁶ No dog presents such endless varieties as the *Spaniel*; all, however, admit of two common divisions, into land and water spaniels: the latter are derived from the northern, the former from the eastern dogs. Land Spaniels are all characterized by a long silky coat; and whether strong and muscular, or slender and diminutive, they are equally elegant and interesting. They are proverbially faithful; and to the sportsman they are highly important, from their sagacity and keen scent. King Charles II. has been said to have been extremely fond of spaniels, two varieties of which are seen in his several portraits, or in those of his favourites. One of these was small, of a black and white colour, with ears of an extreme length; the other was large and black, but the black was beautifully relieved by tan markings, exactly similar to the markings of the black and tan terrier: this breed the late Duke of Norfolk preserved with jealous care.

ter²⁷, the Smooth Terrier, and innumerable others, cultivated and kept either for use or ornament.

Having proceeded thus far in attempting a feeble outline of the natural history of the dog, I propose devoting a few pages to the more interesting task of describing his moral qualities; to which I am prompted by a hope that I may thereby more effectually advocate his cause; and that, by exciting inquiry into his real character and properties, I may awaken a due consideration for him in the minds of those (of whom there are too many) who now regard him with indifference, contempt, or dislike. To those who are conversant with the animal, I need offer no apology for such detail; they will agree, that, in what follows, I have been guilty of no exaggeration; on the contrary, I have barely done justice to this amiable companion of mankind; to one that, whether we consider the extent of his

²⁷ The setter is undoubtedly derived wholly from the spaniel, and not, as has been supposed, from a mixture of spaniel and pointer. ROBERT DUDLEY, Duke of Northumberland, is recorded as the first person who broke (to the net) a setter (i. e. a spaniel), so called from its lying down before game until a net was drawn over both dog and game. After this aptitude had been displayed, it is natural to suppose that the breed would be continued, and future cultivations increased its size and powers. The setter retained the name of spaniel until of late years; and to this day he is called, in Ireland, the English spaniel. GAY calls him the "creeping spaniel;" THOMSON, also, has

How, in his mid-career, the *spaniel* struck
Stiff by the tainted gale, with open nose
Outstretch'd, &c.

The old English setter is now scarce, and has given place to a breed of less docility and subjection, but of enlarged size and increased speed: these are mostly red, and are of Irish origin. The term *Index*, by which the setter has been known, it is evident is not more appropriate; indeed, it is less so than to the pointer.

intelligence, the admirable qualities he displays, the entertainment he affords, or the valuable services he renders us, challenges universal tenderness, attachment, and protection. It would seem almost invidious to attempt a display of the valuable properties of this animal, for the professed purpose of enforcing the principles and practice of humanity towards him; yet it is but too evident that the relative duties of man towards the brute creation in general (but particularly towards the dog) are greatly neglected, too often outraged²⁸. It is probable that these errors spring less

²⁸ Were the principles and practice of humanity made a fundamental part of the education of our children, and were these aided by judicious legal enactments, many branches of the brute creation would have reason to rejoice. Is it not disgraceful to an enlightened people to learn, that infidel nations, as the Turks, have almshouses for their animals? It is an essential part of a Mussulman's creed, and it is an express command of Mahomet, to be humane towards the brute creation. In India, the Bramins are remarked for their tenderness towards all animals. The Banian Hospital is a most remarkable instance of this: it contains horses, asses, mules, oxen, sheep, and birds;—even noxious animals, as rats and mice, are not excluded; all are treated with the utmost kindness and care, until death places them beyond the want of these charities. If we take the Scriptures for our guide, we shall find them full of precepts of humanity, and exemplified also by numerous examples of it: "*A merciful man is merciful to his beast;*" "*Thou shalt not muzzle the ox that treadeth out the corn.*" These are, alone, sufficient to establish the humane tendency of the antient sacred laws, where it was expressly forbidden to "*take the dam on her nest.*" The works of the heathens are equally filled with recommendations of tenderness towards animals. A Grecian magistrate condemned a child to punishment who had deprived a bird of sight; and the Athenian court called the Areopagite, instituted express laws for the protection of brute animals from cruelty. Shall we, as professors of christianity and all the kinder virtues, shall we alone forget what is due to these useful dependants?

from the natural impulses of the heart, than from a mistaken consideration of the real rank that this companion of our mortal pilgrimage holds in Nature's scale. If it were customary to consider the higher orders of brute animals not as mere machines, endowed with faculties purely instinctive, and just sufficient to preserve their existence and extend their species²⁹; but, on the contrary, if they were universally regarded in their true light, as beings highly intellectual, actuated by the noblest passions, endued with memory and recollection³⁰, disposed to imitation, profiting by experience, and acquiring skill from discipline and instruction, then we might hope to see them regarded in their true light; to witness their importance generally acknowledged; and, consequently, to observe their situation ameliorated. These mental properties, in some degree common to all

²⁹ "Whatever affections are displayed by animals, they are accounted but the mere effect of mechanic impulse: however they may verge on human wisdom, their actions are said to have only the semblance of sagacity. Enlightened by reason, man considers himself immensely removed from animals, who (as he considers) have only instinct for their guide; and, born to immortality, he scorns to acknowledge, with brutes that perish, a social bond. Such are the unfeeling dogmas which are *early* instilled into the mind, and which induce a callous insensibility foreign to the native texture of the heart: such are the cruel speculations which prepare us for the practice of that remorseless tyranny, and which palliate the foul oppression that we exercise over our inferior but fellow creatures."—OSWALD.

³⁰ Philosophers distinguish between remembrance and recollection: the former is, according to ARISTOTLE, a passive faculty, acted on by antecedent impressions when circumstances have occasionally arisen to revive them. Recollection implies mental exertion, and the deductions of reason, with a capacity of deriving knowledge from experience. Allowing this definition to be just, a correct analysis of the brute mind will clearly shew them possessed of this faculty, although philosophers have usually denied it them.

the animals around us, shine in their full lustre in the dog; nor am I afraid to hazard an opinion, not only that he is endowed with them beyond any other brute animal³¹, but also that his bodily formation and his

³¹ I profess myself here to tread on tender ground; but this opinion is the result of long and attentive observation, and of as critical and extended inquiry as my humble capacity and limited means would allow; and, although I profess to throw no gauntlet, yet I would court examination and inquiry. It appears, from all I can collect relative to the qualities of the other branches of the canine race, as the wolf, fox, and jackal, that predatory habits and ferocity of disposition are so inherent in them, and that their thirst for blood is so essentially interwoven in their very organization, that, although domestication might have subjugated them, and cultivation might have operated great changes on their qualities and properties, yet they would never have totally eradicated these natural propensities, much less would they ever have developed the higher mental powers of that almost devotional attachment, fidelity, and unceasing attention to the service of mankind, which peculiarly characterize the dog; for, notwithstanding the apparent similarity of his structure to the rest of the canine genus, the dog appears, both from history and observation, to be, even in a state of nature, omnivorous*; and that, unlike them, he by choice mixes his food with vegetable matter, voluntarily eats fruit, prefers dead to living flesh, and has no appetite for *blood* (which the others appear to have) distinct and separate from the animal mass of the bodies he may slaughter. If, also, it is true, as there is great reason to believe, that the intellectual phenomena of animals are in proportion to the extent or quantity of brain they possess, then the dog, whose forehead presents a more ample space for the reception of the anterior cerebral lobes than either the wolf, fox, or jackal, might, *a priori*, be pronounced, as indeed he is found to be, the most intelligent member of the genus. These characteristics, if just, eminently distinguish and raise the dog above those animals, whose similarity of form and habits might

* I place great reliance on this characteristic. All animals purely carnivorous are savage, ferocious, and extremely difficult to reclaim. When by extreme care they have become subjugated, a treacherous watchfulness marks them, and they readily resume their former habits. To increase the courage and ferocity of the dog, we give him raw flesh. The cat, who is wholly carnivorous, can hardly be said to be reclaimed: it always prefers places to persons.

mental capacity so fitted him for this pre-eminence, that no culture would have produced similar effects in any other selection man could have made from the beasts around him. Nevertheless we have to regret, so erroneous is popular prejudice, that a dog is the object, of all others, that excites in some minds the greatest contempt. It might not be irrelevant in this place to inquire, how much of this unmerited contempt we are to attribute to vulgar prejudice, and also to erroneous impressions communicated by means of figurative language in common use. "You dog!" is a common term of reproach used towards those, as well as by those, who often have not half the virtues of one; yet, in ignorant minds, this metaphoric sarcasm

otherwise have led to their selection instead of his own, for the important post of ally, friend, companion, and assistant to mankind. It is presumed, that it is unnecessary to extend the comparison to any other of the genera of quadrupeds. The sagacity of the monkey and of the elephant will, I am aware, gain them many advocates among discerning zoologists; and were I reasoning merely on the *extent* of intelligence displayed, and not on the remarkable aptitude the dog exhibits for useful and companionable properties, and on the higher intellectual qualities of fidelity and personal attachment which he so eminently possesses, I should be content to divide the palm with them. I should allow to the monkey, cunning, artifice, and personal dexterity, to a greater degree than to any other animal whatever; but I should still contend, that the generous and amiable qualities that mark the dog are neither latent nor apparent, to be at all detected in him. With regard to the elephant, it is the opinion of many eminent zoologists that he is, by nature, endued with more rational power of mind than any other brute, the monkey perhaps excepted. In him are also apparent generous and noble passions: he is seen to combine, to compare, and to profit by experience; and so convinced are the inhabitants of the countries where he dwells of his extraordinary mental capacity, that they apply to him, to the monkey, and to man, one common term, *oran*, which signifies *intellectual* or *reasoning*. Nevertheless, as a total, the quality, if not the quantity, must be yielded to the dog.

serves to beget contempt, both for the original and the portrait. Our oldest writers, with whom every thing vile and base is *doglike*, are full of this imagery. Even the sacred writings, abounding in the sublimest precepts of humanity, have added their share to this metaphoric disparagement. Trifling as this may appear, these figurative comparisons, however erroneous, sink deep in many minds, and beget a traditional contempt and ill-will towards one of the most valuable parts of the creation. To combat these popular sources of inhumanity, I have before observed, no means seem so well calculated as to place the subject of our inquiry in his true light, by raising him from the debasement of a mere instinctive machine to the elevation of an intellectual being.

There are so many proofs that the dog is a rational animal, that it affords matter of surprise that any thinking mind should, for a moment, doubt it. Most of our ablest philosophers and metaphysicians have allowed him this distinction; but the *extent* of his reasoning powers has occasioned great diversity of opinion among them. Much, if not all, of this discordance has arisen for want of a precise idea of that inherent property we name *instinct*, under which general term it has been too common with writers to hide the phenomena of *reason*³². It is foreign to my present purpose,

³² Dr. FLEMING states, that this discrepancy and confusion would cease, if we confined *instinct* to the movements of those powers of the mind termed *active*, which are usually considered to consist of appetites, desires, and affections. *Reason*, he argues, should own those phenomena that are purely intellectual.—*Phil. of Zool.*, vol. i, p. 241.

This would appear a just and philosophic definition of the subject, were appetites and desires only included: affections are, many of them, purely intellectual.

if it were within the range of my ability, to enter on an abstruse and metaphysical inquiry into the faculty of *reason*³³. It will be sufficient, if I attempt to analyze

³³ Reason has been described, as the power or faculty by which the mind is enabled to deduce one proposition from another, or by which it proceeds from premises to consequences. LOCKE allows to brutes "ideas distinct enough," and that they *compare* these ideas; but, he thinks, imperfectly. He doubts whether they *compound* their ideas; and he altogether denies them the power of *abstraction*, or of applying the consciousness of particular objects as a general representation of all objects of a similar kind. "For it is evident "we observe no footsteps in them of making use of general signs "for universal ideas; from which we have reason to imagine that "they have not the faculty of abstracting or making general ideas, "since they have no use of words, or any other general signs." Is Mr. LOCKE altogether right in this assumption? Have not other animals, besides man, an intelligible and a very varied language, which is generally understood between each species? Have they not also general sounds for universal ideas: one for fear or dread, let the object of it be what it may; another for love; a distinct one for desire? The call to warn their offspring from danger, and that used to draw them together for food, are totally different, but are each well understood; and that these calls are not purely instinctive we learn from seeing them understood, as well by ducklings fostered under a hen, as by the young chicks themselves. This may be carried still further; for, if we can believe recorded facts, some birds, particularly parrots, have been not only taught speech, but the application of it. The ready and appropriate replies to questions asked of the parrot belonging to Captain O'KELLY, must be still fresh in the remembrance of a great many persons now living; for it was no uncommon thing for some hundred persons to visit this extraordinary bird every year. This was, however, even a less remarkable bird than that mentioned by Sir WILLIAM TEMPLE, in his *Memoirs of what passed in Christendom from 1672 to 1679*, p. 57, 392. I also myself well knew a parrot that was fond of picking of bones, in which it was every day indulged. Whenever it had picked its bone, it used to whistle two or three times, and then call Carlo, Carlo; on which, a dog so named (if within hearing) immediately ran towards the parrot, who invariably, on his appearance,

the property of *instinct*; in prosecuting which, if I should be enabled to prove that innumerable actions performed by dogs, and other animals, are not at all

dropped the bone, and commonly concluded the operation by a chuckle of pleasure at this reciprocity of friendship. Was this purely an instinctive application of sounds? If the bird, in error, had applied the call to any other food, it might have led to such a conclusion; but, as the call was never made but when a bone was at hand, it certainly warrants the inference I would draw from it. Exactly a similar circumstance has been credibly related to me of a cockatoo which used to call a cat, Puss, Puss, to receive a bone when she had finished picking it. What does a dog mean that stands barking at a door where he has been usually admitted, but an intelligible notice that he is waiting, and an earnest request to be let in?

It is reasonable to suppose, that, when LOCKE denied to brutes the use, or rather the application, of speech, or of such general sounds as convey universal ideas, he was either unacquainted with the history of the preacher monkey (*simia Beelzebub*, LIN.), or altogether disbelieved the accounts we have of it. MARCGRAAVE, an observant naturalist of the highest authority, and one whose testimony has been corroborated by others who, like him, have been eye-witnesses to the peculiar habits of these extraordinary animals, has informed us that troops of these animals assemble in the woods of the Brazils regularly every morning and evening. At these times, one among the number, placing himself on a branch above the rest, seems to command general attention, for all assemble and sit beneath him in profound silence. The superior, or preacher, then commences a species of chattering in a loud shrill kind of howl; which having continued a certain time, he makes a signal with his hand, when the whole assembly join in chorus. This continues until he again by a signal commands silence; the orator then resumes his discourse, and finishes his address, and the assembly breaks up. DAMPIER confirms this account, and further adds, that he has frequently witnessed with astonishment, the attention that members of the community have paid to one that has been wounded by a shot: they have gathered round the unhappy sufferer, have endeavoured to close the wound, and, when the bleeding has been excessive, they have been observed to insert pledges of vegetables to stop the hæmorrhage.

The language of animals, it is evident, is sufficient for all the

referrible to this property, I shall have compassed my object, and shall have not illogically proved, that, if such actions are not *instinctive*, they must be *rational*.

Instinct, in a popular point of view, may be defined to be, that property in animals ³⁴ by which such actions

purposes of communication, from what we observe in the watching of sentinel birds, and in the instantaneous change in the flight and extraordinary aerial evolutions of many congregated fowls, which are performed with such astonishing rapidity and precision, as at once to convince us they are effected by a signal of sound, and not of sight ; which latter the dense mass of the flock would prevent many of them from observing.

Presuming on the authority of LOCKE, it has been further argued, that the manifest deficiency in the organs connected with speech in brutes, is an additional proof, not only that they have little oral communication between themselves, but that they are, from this cause, essentially inferior in their intellectual importance. Without denying their inferiority, it may however be answered, that full or extensive intonation of voice is not necessary to the existence, or even to the individual importance, of an intellectual animal, as we witness in the conventional language of the deaf and dumb among the human. Neither, in fact, is it essentially necessary that the conventional language of brutes should be communicated by the mouth. In many insects we know it is performed wholly without the oral organs ; in some, air is agitated to produce different sounds by means of the wings ; in others, by a mechanism not unlike the pipes of an organ ; while others, again, either strike on hard substances with their antennæ, or communicate by crossing these slender and flexible organs over the same organs of those with whom they wish to communicate. One cannot witness this mode of communication without being struck with the similarity between it and the conveyance of sound to the perception of a deaf person, by speaking along a plane surface in connection with the inner surface of the mouth.

³⁴ The instinctive principle is not confined to animals only ; it pervades and directs the first movements of all organized bodies. Plants alter their course to seek the sun, or to imbibe a purer atmosphere. Others produce surprising phenomena in their attempts to emerge from darkness into light ; and the roots of trees change and recharge their direction in search of earth adapted to their wants as often as the occasion requires it.

are performed, as immediately tend to the preservation of themselves and the propagation of their species. It is a principle that may be considered as inherent in the organization of the body, and therefore (unlike to reason) it commences with the organization of the body itself; as we know by the motions and other actions of animals *in utero*. It develops itself (contrary to reason) in full perfection as soon as it is wanted. The young chick, the moment it is disengaged from its shell, dexterously picks up its food, and judiciously selects it from extraneous matter. The indigent and blind puppy, immediately on its entry into the world, searches out the mammillary processes that yield its nutriment, and adapts the surfaces of its little mouth to exhaust the gland, with more dexterity than the most acute philosopher aided by every mechanical principle could do. The operations of instinct being directed to the preservation of existence and the continuance of the species, it was necessarily given *perfect*, or these ends would not have been answered; but as its operations seem confined wholly to these great ends, so it is very limited in its scale of action, and admits of little, if any, improvement. In domestic as well as unreclaimed animals, such actions as are directed to the essential laws of preservation and propagation remain always alike: the same general aptitudes, the same dexterity in catering their food, excluding their enemies, and fostering their young, were as apparent two thousand years ago as at the present day. The instinctive principle, as a purely preservative one, was originally given to them perfect; it therefore required no extension, and it has received none.

If this definition of instinct should be considered correct, it will require but little argument to prove, that, as innumerable actions are daily performed by animals, particularly of the higher and cultivated orders, which

are totally unconnected with either of these great and fundamental laws of organic life; so it is self-evident that all such actions can only be referred to the higher faculty of reason, and on that account they may be called *extra-instinctive*. These extra-instinctive operations among animals present themselves in such infinite variety, and the impulses whereby they are directed are so diversified, that it is difficult to make any appropriate selections from among them. For the sake of elucidation, I will, however, instance two or three striking examples of what I consider intellectual operations of the mind, and such as are totally without the range of instinct.

All enslaved animals have a proneness to deceive and to decoy others into the same state of captivity. If this disposition occurred in those that are gregarious only, it might be argued to be purely instinctive; but it takes place equally in such as are by nature solitary, that is, that associate in pairs only. This proneness is observed in caged birds to lure others to the net. The decoy duck traverses the pool, and, by a particular cry, she engages the attention of the wild fowl flying about her; when, having collected a sufficient number, she leads them through a narrow tunnel into direct captivity: on being herself released, she immediately departs in quest of more. Tame elephants are sent out in search of wild ones; which, having found, they return with, and entice within the enclosures. Each wild elephant so taken is then fastened between two tame ones, which immediately enter on a regular discipline, more or less rigorous, as their captive is more or less refractory. A few days' fasting, with occasional blows from the proboscis of their tutors, are generally sufficient to render their pupil mild and tractable. It has been asserted, that, much as this system must inconvenience the tame

elephants themselves, they are, nevertheless, observed to enter on it with alacrity, and to conduct it so judiciously, as to excite sentiments of admiration in those who behold it: surely this may be said to be extra-instinctive.—I once possessed a monkey, which, during the summer months, was chained to a window-seat overlooking a back area passage, to the rails of which the distance might be four or five feet. From this window to the opposite rails the monkey used to jump every now and then for amusement. In one of these leaps he was suddenly arrested by his chain becoming entangled, and he received a severe fall. His memory made him remember the pain, and his reflections taught him the cause. Benefiting by experience, his judgment determined him, before he again took the same leap, to pass the chain that confined him entirely through his hands; which having done, he took his accustomed spring without fear: this caution he observed in every future attempt. It is singular, and it serves to shew how he combined ideas, that it was only when leaping from the window *to* the rails that he examined his chain; on his *return*, he always jumped fearlessly, because every portion of the chain was exposed before him, which in the other instance it *was not*. I was in possession of another monkey, also, who used to amuse himself by swinging on a clothes line hung in a laundry in which he was confined. I was at the time a resident with Dr. HAIGHTON, whose servants, not being so partial to pug as I was, resolved to play him a trick, and therefore purposely cut the rope, leaving only a few threads to preserve appearances and deceive the animal. As it may be supposed, the next time he attempted his amusement, he got a fall. When the line was replaced, he shewed every inclination to renew his sport, but none whatever to repeat his accident:

before, therefore, he again attempted to swing, he examined his rope most carefully, by tugging at each end. Having satisfied himself, he recommenced his sport; but at every future time of swinging the crafty animal observed the same caution. Can these extraordinary instances of reflection and forethought be referred to instinct? The pain and fright in both instances were *remembered*, but the effects resulting from the means made use of to avoid a repetition of them were *recollected*.—In a former note I have noticed the talking parrots of PRINCE MAURICE and CAPT. O'KELLY: with regard to the extraordinary powers of the latter, and its apparent rational application of speech, there can be no possible doubt, as hundreds of witnesses, at present living, can testify.

The late Rev. —— ROBINSON, of *Cambridge*, was a great admirer of bees, with which he used to amuse himself much. On visiting them early one morning, he was struck with the appearance of a toad, who, by some means, had stationed himself on the stand whereon the bees were placed. Mr. ROBINSON's first impulse was to remove the toad, but, observing that no bees issued from the immediate hive opposite to which the intruder had placed himself, he became curious to watch the event; and the more so, as, by an unusual hum among the bees, he concluded they were in consultation relative to their unexpected visitor. This conjecture proved correct, for in a few minutes they unanimously came out and attacked the toad, who died in a little time. Having done this, they again retired within their hive, and again appeared to deliberate, probably on what was next to be done. On reappearing, they, apparently with one accord, went in quest of a matter more plastic than their common wax, with which in a few hours they completely encased the dead toad, and by this means

effectually prevented any noisome stench from proving injurious to them. This account I had from Mr. ROBINSON himself, and I make no doubt the curiosity itself still remains in the family. This anecdote, I think, infers that these busy wanderers can *compare*, *combine*, and, perhaps, *reason abstractedly*. It is evident, from what occurred, that they can *converse*; and their conduct throughout proved them under a guidance superior to that of instinct. For instinct cannot be supposed to combat against such accidents as result from a cultivated or domestic state: on the contrary, the capability of so guarding against unnatural and improbable contingencies, presupposes reflection and forethought. The instinctive principle might have driven the bees to destroy the toad, without doubt; but the prevention of the after effects likely to arise from it, and the unanimity in the means pursued for the purpose, bespeak the highest efforts of reason. The following pages will produce instances of equal, if not of superior, intellectual phenomena in the dog.

Having, as I hope, satisfactorily proved that our subject, the dog, has rational powers; it remains to inquire how these have been cultivated to produce that obedience and utility which now so eminently distinguish him. Had the dog enjoyed the properties of instinct only, he would have proved but an indifferent subject for cultivation. It has already been attempted to be proved, that instinct admits of little, if any, improvement; but, on the contrary, those faculties which are purely rational admit of great increase. In wild animals, it is this improvement of their reasoning part that gives that *traditional knowledge* so generally observed among them, by which they increase their comforts, vary their food, and multiply their pleasures: yet these

accessions are trifling, compared with those which are gained under the fostering hand of cultivation. Nevertheless, the highest degree of cultivation practised on an individual would operate but little on that individual himself. He might be conquered, but he would be untamed; his wild nature would still appear under all the mask that fear and hunger might cover him with: neither is there any doubt but he would escape the first moment it was in his power, and instinctively seek his native plains. By some extraordinary provision of nature, the rational faculties of the mind are found to be equally capable of *hereditary cultivation* as the form of the body⁵⁵; and the powers and energies derived from cultivation are handed down from sire to son, and receive additional improvement, as discipline and care are bestowed to bring the intellectual phenomena into action.

This hereditary transit of cultivated qualities, this genealogical accumulation of knowledge, has never met with sufficient consideration among philosophers and

⁵⁵ Precisely to understand how the faculties, under cultivation, become capable of being handed down in hereditary descent equally with the improved person, would require a knowledge of the mutual dependance that mind and body have on each other, and of the exact nature of the connection between them. That the intellectual functions are intimately connected with the organization and physical condition of the brain, we are certain; and although we have reason to consider the brain as only the organ by which the intellectual phenomena are administered, yet it will be evident that any increase in either the quantity or quality of the brain will enlarge the means whereby such phenomena are produced. That the volume of brain is increased in the cultivated dog, every one must admit who remarks the difference between the expanded head of the domestic, and the more narrow and contracted one of the wild breeds.

naturalists; and yet most of the phenomena observed in our domestic animals calculated to excite wonder, and frequently to create doubt, however true, mainly depend on it. That the intellectual powers are capable of cultivation, in both the animal and his progeny, appears from numerous facts we daily witness. The fear of man, now so general among animals, is only a cultivated quality, if credit is to be given to numerous accounts related by travellers. GMELIN informs us, that the foxes in *Siberia* came readily towards him. BOUGANVILLE relates the same of the animals in the *Falkland* islands. The first European visitors to Dusky Bay, in *New Zealand*, were surrounded by birds, who settled on them, and became an easy prey to the cats on board their ships. Among ourselves, in districts where game is strictly preserved, the pheasants, partridges, and hares, feed close around us. The fearlessness of the robin, wren, martin, and swallow, arises from a *traditional* consciousness that they are never interrupted: our sparrows and rooks, on the contrary, learn to avoid man as a constant enemy, and can distinguish when he is armed with a gun, almost as soon as they are out of the nest. The pointing and setting of our sporting dogs is a property common to every kind of dog; but it is improved and cultivated in these immediate breeds to a particular purpose. This property descends with the race, in some instances, so perfectly, as to require in the descendants no breaking or training. Nature undoubtedly gave to the original dog all the ferocity so usually met with in the English mastiff; but the determined perseverance in battle, the contempt of pain, danger, and death, that characterize the bulldog, is wholly a cultivated quality. It is the same in our game fowls; for in the East, from whence they are derived, they are not courageous. From all that has

preceded, it may be gained that the judicious cultivation of the dog has fostered and improved his personal and mental qualities to their present state of perfection. By the beauty of his form, he becomes a pleasing object to our eyes ; but principally is he rendered interesting to us by his utility and many amiable qualities ; in which last point of view a boundless field opens itself.

If I might be allowed to draw a comparison between the human and brute character, I should hope to be able to prove, that whatever is noble, generous, and amiable in man, will meet with no mean counterpart in the dog.

Is *courage* a human attribute universally esteemed ? Where can it be found in a more eminent degree than in the canine species ? The bull-dog attacks all animals, indiscriminately, without fear ; and his fortitude is such, that, until he conquers his enemy, no sufferings short of extinction can make him forego his purpose. The smallest dog, when enraged, heedless of the consequences, will attack one infinitely larger than himself ; and, in these instances, we have frequently an opportunity of observing *bravery* in its noblest form, as united with *mercy* ; for it is seldom that a large dog so attacked will hurt a small one. Mr. DIBDIN says, “ I had a “ yard-dog, that had every thing of the wolf but the “ ferocity. He was gentle as a lamb ; nothing offered “ to himself could insult him ; but no roused lion could “ be more terrible if any of the family, or the other “ dogs, were insulted.”

Are *constancy* and *fidelity* virtues ? The dog is the acknowledged emblem of them. His fidelity is wholly disinterested, and is not to be corrupted ; nor is any bribe, however tempting, sufficient to make him betray a trust reposed in him. In *London* streets, we every day see carts and waggons watched by these faithful

guardians in the absence of the drivers; and, among the numerous stratagems employed by thieves to draw off the attention of the owners or drivers of these carriages, we never hear of any such attempt being successful while there is a dog at hand. During the still hours of night, this vigilant protector refuses sleep, and is continually on the watch. Common noises alarm him not; but a whisper, a soft footstep, or any unusual sound, he interprets into danger to his master, and he employs all his might to prevent the perpetration of the threatened evil. In the country, the shepherd trusts his sheep to his dog, while he pursues his avocations at a distance, well assured that they will be carefully attended to. The peasant's cur guards the coat and scanty meal of his master in the fields. The butcher, profiting by the *fidelity* of his dog, leaves his meat with no other protector; and though the animal's support is derived from the bits and parings that come from this very meat; and though he might, without present danger, satisfy his appetite; yet he honestly refrains, and waits with patience for what may be gratuitously bestowed.

I was once called from dinner in a hurry, to attend to something that occurred: unintentionally I left a favourite cat in the room, together with a no less favourite spaniel. When I returned, I found the spaniel, who was not a small one, extending her whole length along the table, by the side of a leg of mutton which I had left. On my entrance, she shewed no signs of fear, nor did she immediately alter her position; I was sure, therefore, that none but a good motive had placed her in this extraordinary situation: nor had I long to conjecture. Puss was skulking in a corner; and, though the mutton was untouched, yet her conscious fears clearly evinced that she had been driven from the table in the act of attempting a robbery on the meat, to

which she was too prone, and that her situation had been occupied by this faithful spaniel, to prevent a repetition of the attempts. Here was *fidelity* united with great intellect, and wholly free from the aid of instinct. This property of guarding victuals from the cat, or from other dogs, was a daily practice of this animal; and, while cooking had been going forward, the floor might have been strewed with edibles: they would have been all safe from her own touch, and as carefully guarded from that of others. A similar property is common to many dogs, but to spaniels particularly.

Perhaps the following instance of unwearied *constancy* can hardly be equalled: it was related to me, many years ago, by an old inhabitant of the parish in which it occurred; and I have so much dependance on the probity of the gentleman who told it to me, that I can venture to answer for its authenticity:—

In the parish of Saint Olave, *Tooley Street, Borough*, the churchyard is detached from the church, and surrounded with high buildings, so as to be wholly inaccessible but by one large close gate, and by the windows which look into it. A poor tailor, of this parish, dying, left a small cur dog inconsolable for his loss. The little animal would not leave his dead master, not even for food; and whatever he ate was forced to be placed in the same room with the corpse. When the body was removed for burial, this faithful attendant followed the coffin. After the funeral, he was driven out of the churchyard by the sexton, who, the next day, again found the animal, who had made his way by some unaccountable means (probably through some cellar window) into the enclosure, and had dug himself a bed on the grave of his master. Once more he was hunted out, and again he was found in the same situation the following day. The minister of the parish hearing of the

circumstance, had him caught, taken home, and fed, and endeavoured by every means to win the animal's affections: but they were wedded to his late master; and, in consequence, he took the first opportunity to escape, and regain his lonely situation. With true benevolence, the worthy clergyman permitted him to follow the bent of his inclinations; and, to soften the rigour of his fate, he built him, upon the grave, a small kennel, which was replenished once a day with food and water. Two years did this example of *fidelity* and *constancy* pass in this manner, when death put an end to his griefs; and the extended philanthropy of the good clergyman allowed his remains an asylum with his beloved master³⁶.

I have seen a poodle dog, the property of the MARQUIS of WORCESTER; which dog was taken by him from the grave of his former owner, a French officer, who, having been killed at the battle of *Salamanca*, had been buried on the spot. This dog had remained on the grave till he was nearly starved, and even then was re-

³⁶ MARIE ANTOINETTE avoit au Temple un chien qui l'avoit constamment suivie. Lorsqu'elle fut transférée à la Conciergerie, le chien y vient avec elle; mais on ne la laissa pas entrer dans cette nouvelle prison. Il attendit longtemps au guichet, où il fut maltraité par les gendarmes, qui lui donnèrent des coups de baïonnettes: ces mauvais traitemens n'èbranlerent point sa fidélité: il resta toujours près de l'endroit où étoit sa maîtresse: et lorsqu'il se sentoit pressé par la faim, il alloit dans quelques maisons voisines du palais, où il trouvoit à manger. Il revenoit ensuite se coucher à la porte de la Conciergerie. Lorsque MARIE ANTOINETTE eut perdue la vie sur l'échafaud, le chien velloit toujours à la porte de sa prison; il continuoit d'aller chercher quelques débris de cuisine chez les traiteurs du voisinage; mais il ne se donnoit à personne, et il revenoit toujours au porte où sa fidélité l'avoit placé—il y'étoit encore en 1795, et tenu le quartier le désignoit sous le nom de *Chien de la Rein*.

moved with difficulty; so *faithful* was he even to the remains of him he had tenderly loved.

I have known many dogs whose habit has been, as soon as left by their owners, to search for something belonging immediately to them—generally some article of dress. This has been carried by the animal to his bed, or into one corner of the room; and to lie upon, or to watch this, without stirring from it till the owner's return, has been all his employ, and seemingly his only solace.

Many dogs have an universal philanthropy, if I may so express it—a general *attachment* to all mankind. Others are not indiscriminately friendly to every one; but such, almost invariably, make it up by a more ardent and a more durable regard for those they do love. Perhaps the duration of an attachment in these animals heightens our ideas of the intellectual powers, even more than the immediate ardency of it; for the constancy of it combines memory, reflection, and sentiments, that completely soar above instinctive impulses. This regard for particular persons is so great, that it frequently interferes with, and, now and then, totally overcomes their instinctive care for their young. Here the moral principle is at war with the instinctive, which gives place to the superior powers of pure intellect. Dogs forcibly separated from those they love, frequently refuse food for many days: some have actually starved themselves; and others, taking just enough to support nature, have more gradually exhausted themselves, and at length have died of grief. The same has occasionally occurred when they have been separated from each other.

Two spaniels, mother and son, were self hunting, in Mr. DRAKE's woods, near *Amersham, Bucks.* The gamekeeper shot the mother; the son, frightened, ran

away for an hour or two, and then returned to look for his mother. Having found her dead body, he laid himself down by her, and was discovered in that situation the next day by his master, who took him home, together with the body of the mother. Six weeks did this affectionate creature refuse all consolation, and almost all nutriment. He became at length universally convulsed, and died of grief.

I have also seen several instances of dogs voluntarily undertaking the office of nurse to others, who have been sick. When we consider the warmth of their feelings, and the tenderness of their regard, this is not to be wondered at, if it happens among those habituated to one another; but I have occasionally observed it among those who were nearly strangers to each other. One very particular case occurs to my recollection, where a large dog, of the mastiff breed, hardly full grown, attached himself to a very small spaniel ill with distemper; from which the large dog was himself but newly recovered. He commenced this attention to the spaniel the moment he saw it, and, for several weeks, he continued it unremittingly, licking him clean, following him every where, and carefully protecting him from harm. When the large dog was fed, he has been seen to save a portion, and to solicit the little one to eat it; and, in one instance, he was observed to select a favourite morsel, and carry it to the kennel where the sick animal lay. When the little dog was, from illness, unable to move, the large one used to sit at the door of his kennel, where he would remain for hours, guarding him from interruption. Here was no instinct, no interest; it was wholly the action of the best qualities of the mind.

In the human species, *gratitude* has ever been considered as one of the highest virtues. Where shall we see it exhibited in a more interesting point of view than

by these admirable animals? A benefit is never forgotten by the majority of them; but for injuries, they have the shortest memory of any living creature. Every person must have been an eye-witness to many facts of this kind; but my opportunities of seeing different dogs have presented me with such varied occasions, where gratitude has been displayed in its fullest extent, that I may be permitted to mention one or two.

A large setter, ill with the distemper, had been most tenderly nursed by a lady for three weeks: at length he became so ill as to be placed on a bed, where he remained three days in a dying situation. After a short absence, the lady, on re-entering the room, observed him to fix his eyes attentively on her, and make an effort to crawl across the bed towards her: this he accomplished, evidently for the sole purpose of licking her hands; which having done, he expired without a groan. I am fully convinced that the animal was sensible of his approaching dissolution, and that this was a last forcible effort to express his gratitude for the care taken of him.

The following anecdotes tend to set the *sagacity* of the dog in a favourable point of view; but the instances of strong intellectual capacity are so common, that it is probable the experience of every one conversant with dogs will furnish many such:—

A native of Germany, fond of travelling, was pursuing his course through Holland, accompanied by a large dog. Walking, one evening, on a high bank which formed one side of a dike, or canal, so common in that country, his foot slipped, and he was precipitated into the water; and, being unable to swim, he soon became senseless. When he recovered his recollection, he found himself in a cottage, on the contrary side of the dike to that from which he fell, surrounded

by peasants, who had been using the means so generally practised in that country for the recovery of drowned persons. The account given by the peasants was, that one of them, returning home from his labour, observed, at a considerable distance, a large dog in the water swimming and dragging, and sometimes pushing, something that he seemed to have great difficulty in supporting; but which he, at length, succeeded in getting into a small creek on the opposite side to that on which the men were.

When the animal had pulled what he had hitherto supported as far out of the water as he was able, the peasant discovered that it was the body of a man. The dog, having shaken himself, began industriously to lick the hands and face of his master, while the peasant hastened across; and, having obtained assistance, the body was conveyed to a neighbouring house, where the resuscitating means used soon restored him to sense and recollection. Two very considerable bruises, with the marks of teeth, appeared, one on his shoulder, the other at the root of the poll of the head: from these circumstances his master seemed convinced that the faithful beast first seized him by the shoulder, and swam with him in this manner some time; but that his *sagacity* had prompted him to let go this hold, and shift it to the nape of the neck, by which he had been enabled to support the head out of the water. I should, in justice to the gratitude of this gentleman, who related the circumstances to me himself, state that, wherever he afterwards boarded, he always voluntarily gave half as much for the support of his dog as he agreed to give for himself, by which extreme liberality he insured the greatest care and kindness for his preserver.

In relating the following, I shall possibly stagger the faith of some: I can only remark, that I would not

willingly trespass the bounds of truth. The facts were detailed to me by several persons of veracity, who professed to have been eye-witnesses of them; and all the circumstances appeared to be well known in the neighbourhood.

A butcher and cattle dealer, who resided about nine miles from the town of *Alston*, in *Cumberland*, bought a dog of a drover. This butcher was accustomed to purchase sheep and kine in the vicinity, which, when fattened, he drove to *Alston* market, and sold. In these excursions he was frequently astonished at the adroitness of his dog, and at the extreme dexterity with which he managed the cattle. At last, so convinced was he of his *sagacity* as well as fidelity, that he wagered he would entrust him with a certain number of oxen and sheep to drive, wholly unattended, to *Alston* market. It was stipulated that no person should be within sight or hearing who had the least controul over the dog; nor was any spectator to interfere, nor be within a given distance. On trial, this extraordinary animal proceeded with his business in the most steady and dexterous manner; and although he had frequently to drive his charge through other herds who were grazing, yet he never lost one, but, conducting them into the very yard to which he was used to drive them when with his master, he significantly delivered them up to the person appointed to receive them, by barking at his door. What more particularly marked the dog's *sagacity* was, that, when the path the herd travelled lay through a spot where others were grazing, he would run forward, stop his own drove, and then, driving the others away, collect his scattered charge, and proceed. He was, I believe, several times afterwards thus sent alone, for the amusement of the curious or the convenience of his master, and always acquitted himself in the same

adroit and intelligent manner. The story reaching the ears of a gentleman travelling in that neighbourhood, he bought the dog for a considerable sum of money. Extraordinary as the circumstances are, I have no doubt whatever as to the perfect correctness of the statement. I resided for a twelvemonth within a few miles of the spot, and, as I before observed, the whole appeared fresh in every one's recollection.

I remember watching a shepherd's boy in Scotland, who was sitting on the bank of a wide but shallow stream. A sheep had strayed to a considerable distance on the other side of the water; the boy, calling to his dog, ordered him to fetch that sheep back, but to do it gently, for she was heavy in lamb. I do not affect to say that the dog understood the reason for which he was commanded to perform this office in a more gentle manner than usual; but that he did understand he was to do it gently was very evident, for he immediately marched away through the water, came gently up to the side of the sheep, turned her towards the rest, and then both dog and sheep walked quietly side by side back to the flock. I was scarcely ever more pleased at a trifling incident in rural scenery than at this.

The natural sagacity of the dog, united with a teachable disposition, was early turned by man to many useful purposes. In antient history we have many relations of cultivated talents in dogs, as well as many anecdotes of extraordinary feats performed by them. Some breeds inherit this aptitude more than others, though all are sufficiently docile. The barbet, or poodle, is a prominent instance: I have seen several of these who have performed the ordinary offices of a servant; they would run on errands, shut the door, ring the bell, &c. &c. In some instances they have been sent to con-

siderable distances³⁷ with letters, parcels, &c.—The farce of the Deserter, got up some years ago at ASTLEY'S, and performed wholly by dogs, exhibited the most astonishing proof of their teachable and imitative disposition that it is possible to conceive.

I shall conclude this summary of the moral qualities of the dog, by noticing a property in him, which, if it has not altogether escaped the observation of philosophers and naturalists, it has certainly been but very cursorily noticed. It is, however, a subject worthy the most attentive investigation of the metaphysician and zoologist; and when its importance is considered, from the extraordinary nature of the phenomena it displays, it is only surprising that it has not before received a full investigation. This property may be justly called a *sixth sense*³⁸, although it has no outward organs con-

³⁷ I have been told that the late Mr. HARVEY COMBE sent a Newfoundland dog from *Andover*, in *Hampshire*, to *Hyde Park Corner*. Mr. COMBE had, on passing through the turnpike, purposely placed his gloves on the chimney mantel-piece, in presence of the dog. When Mr. C. arrived at *Andover*, he despatched the dog back for his gloves, with which the sagacious animal returned in a shorter time than was supposed sufficient for the task.

³⁸ Dr. ROGET, in a lecture delivered at the Royal Institution, took some notice of what he termed a *sixth sense* that had been observed by him in bats, and some other animals, but which sense appears totally distinct from the faculty of observing distances. The property Dr. R. notices is that whereby some animals are enabled to perceive the situation of external objects without seeing or coming in contact with them. SPALLANZANI had noticed this long before.

Mr. JACOBSON has lately discovered, at the bottom and fore part of the nostrils, in some quadrupeds, certain organs, which communicate with the mouth, are amply supplied with nerves and blood-vessels, and which seem to him to be the seat of some peculiar faculty; but

nected with it. All animals, man excepted, have it: it is altogether unallied to any principle of intelligence in the human mind; and is totally distinct from the five outward senses common to both man and inferior animals. Neither is memory at all concerned in it: it is purely instinctive, and is therefore seldom found to err; and, being instinctive, it is very universally distributed. This sixth sense is that whereby a dog, removed to a distance, is enabled to return alone, although the intervening portions of the distance are utterly unknown to him, and that, in such return, it is evident he can neither be assisted by seeing, hearing, smelling, or recollection.

whether of the sixth sense noticed by Dr. ROGET, or of that of the judgment of distances, or of some other, he is not able to decide.

With regard to the perception of external objects "without vision" (I would rather say without apparent light) or contact, there are other ways of accounting for this property without the intervention of a sixth sense. When we know that a condur (*vultur gryphus*, LIN.) can either see or smell, and perhaps both, a carcass, one or two miles distant, we can readily conceive that the eye in nocturnal and crepuscular animals may be so exquisitely susceptible, as to be stimulated by rays of light infinitely finer than our organs can perceive. This perception might also be accounted for by the acuteness of smelling, which we know is, in some animals, so great, that the approach of many objects is ascertained by it without vision. Another mode by which the situation of objects is perceived without seeing or coming in contact with them, is by means of the ears: this principally relates to large objects. It is not difficult to accustom oneself to walk by the side of a wall or along a dark passage, so as neither to touch the wall nor swerve from the centre of the passage. The sonorous rays reverberated (even the breathing may effect this) from the objects, and again striking the ear, may enable it to judge of the distance by the acuteness of the sound, or the length of its return. This perception of large objects, without seeing or contact, I have often witnessed.

If a man was travelling over an extensive plain, and a heavy fall of snow was suddenly to obscure his sight of the track, and other surrounding objects that might otherwise serve as guides, he would soon become bewildered: all his senses would be useless to him; and he would be, at length, utterly at a loss how to proceed. If he should deviate one moment from the straight line, he would become immediately involved in inexplicable embarrassment, and will be as likely to pursue a totally opposite direction, as to follow that which would conduct him to his house. No such thing happens to either a dog or a horse; on the contrary, when all track is lost, when no object appears but the falling mass, turn either the one or the other round as many times as you will, and endeavour even to bewilder him, yet, the moment he is left at his liberty, with little or no hesitation he will turn his head towards home, and, if unmolested, will arrive there in safety. It is evident that neither the dog nor the horse, so situated, can see through the falling snow; it is equally impossible for either to smell his way; for if the distance is one, two, or three hundred miles, the faculty is alike active and certain. Neither can remembrance operate, for no surrounding object can become evident to assist.—Camels, who travel many hundred miles over sandy desarts, never mistake their road. Pigeons, removed under the closest covering, to a distance they have never before travelled, when set at liberty, immediately return. LITHgow assures us, that pigeons carry letters from *Babylon* to *Aleppo* in thirty hours, which require thirty days to be carried by a man. Bees, and other insects, readily return to any given spot without hesitation. Indeed, their whole life is spent in wandering, and without such a faculty they could never find their homes.

A gentleman brought from *Newfoundland* a dog of

the true breed for his brother, who resided in the neighbourhood of *Thames Street*, but who, having no other means of keeping the animal, except in close confinement, preferred sending him to a friend living in *Scotland*. The dog, who had originally been disembarked at *Thames Street*, was again re-embarked at the same place, on board a *Berwick Smack*; by which means, during his stay in *London*, he had never travelled half a mile from the spot he first landed at. During the short time he remained, he had, however, contracted an affection for his master; and, when he arrived in *Scotland*, his regrets at the separation induced him to take the first opportunity of escaping; and, though he was certainly unacquainted with every yard of the road, yet he found his way back in a very short time to his former residence on *Fish Street Hill*; but in so exhausted a state, that he had only time to express his joy at seeing his master, and expired within an hour after his arrival.

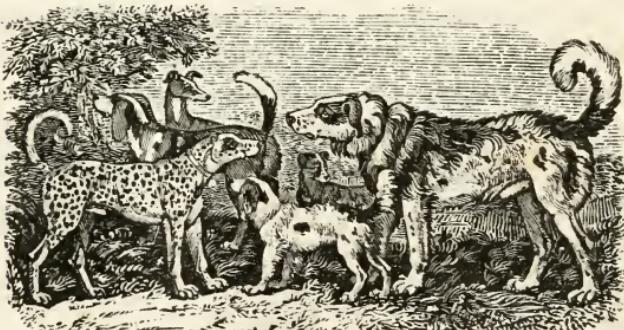
Dogs losing their owners in the most remote and intricate parts of *London*, which they have never before visited, readily return by the same instinctive principle; and instances have occurred where they have found their way back from foreign countries even.

Before I conclude this interesting subject, I would remark that dogs, in addition to the capability of traversing distances aright that are new to them, have also the faculty of remarking time, and of informing themselves of the recurrence of determined periods.

A dog was visited every Sunday by his master, and only on that day; but, although no alteration whatever took place in surrounding appearances, on that day he invariably placed himself at the door in silent expectation till his master arrived.—“A dog trudged two miles “every Saturday to market, to cater for himself in the

“shambles: on that day, and on that day only, did he ‘ever attempt it.’”—*New York Post*. Many instances of similar observation have been noticed, which prove that the passage of time is marked by these animals, as well as the direction of situation and judgment of distance.

Would my reader’s patience to read, continue as long as mine to write on this subject, we should accompany each other through volumes. Innumerable anecdotes, tending to display the valuable properties and amiable qualities of the dog, crowd on my recollection: but I would indulge a hope that enough has been brought forward to prove him worthy of the highest estimation; and to create for him such an interest as will insure that care and attention which he so eminently deserves.



DISEASES OF DOGS.

A WORK of this kind will not admit of an anatomical display of the internal organs, nor of a minute inquiry into the animal economy of the dog. In the present state of canine medicine, it is sufficient to be aware, that the *viscera* of this animal bear so close a resemblance in anatomical structure to the same parts in the human subject, that to study the one, is to gain an acquaintance with the other.

This resemblance is particularly striking between the organs concerned in the assimilation of food, and which is not to be wondered at, when we consider that both the subjects they belong to are omnivorous; and to which cause it is probable we must attribute the close affinity that exists between their diseases also. This similarity of disease does not, however, equally extend to all the domestic animals around us. On the contrary, in some of them, the analogy wholly fails, and to this it is owing that the medical treatment of dogs has hitherto made such small progress. The human physician thinks the matter beneath his notice, and the veterinarian finds it beyond his comprehension. I have had innumerable opportunities of witnessing, and lamenting, this total want of experience and information on canine medicine, even among the best veterinarians; and until it is studied as a distinct branch of art, it will remain so.

Not only do the maladies of the canine race very nearly resemble those of the human species, in cause, appearance, and effect; but the similarity is extended to the number and variety of them also; as may be seen by a reference to the nosological catalogue, where many complaints will be found

that have no existence among other domestic animals. These affinities will, however, cease to excite wonder when we consider that, in addition to the complexity of structure in dogs, their complete domestication has subjected them to lives wholly artificial, and, in many instances, to habits the most unhealthy.

But although the analogies between the human and canine diseases are so striking, yet circumstances exist that would foil the most experienced physician, equally with the most able veterinarian, in his attempts at a successful curative practice on dogs, without a particular and diligent attention to canine pathology, as a distinct branch of the *ars medendi*. In many diseases of the dog, every thing must depend on the experience and acuteness of the practitioner, in detecting the immediate seat of the complaint. Important exceptions to the strict analogy I have noticed, likewise occur, which would embarrass both the human and veterinary physicians. A prominent instance presents itself in the specific canine diseases, which are wholly unlike any human malady. Another important deviation arises from the different effects that some of the remedies employed have on the two subjects.

Ten grains of calomel, though a full dose, is by no means a destructive one to a human subject, yet I have seen a large pointer killed by this quantity, which had been ordered by an eminent surgeon; this would not however always happen. On the other hand, three drams of aloes, which would probably prove fatal to nine human persons out of ten, might be taken by some large dogs with impunity. A dog could take, without much derangement, a dose of opium which would destroy a man; on the contrary, the quantity of *nux vomica*, or crowfig, that would destroy the largest dog, would fail to destroy a man. Between the effects produced by many medicinal articles on the stomachs of other domestic animals, and that of the dog, a still more marked distinction, or, at least, a more universal one, exists. It will therefore be evident, that neither the human physician, nor the veterinary practitioner, can be equal to a successful medical practice on dogs.

without much experience thereon, and a professed and particular attention to the subject.

When, also, the existing disease has been ascertained, and the appropriate treatment has been determined on, still another difficulty often presents itself; which is, how to administer the remedy. Now and then, dogs prove very refractory, and no small degree of force is necessary to get any medicine down. In general cases, however, a slight degree of dexterity will accomplish the purpose.

The most convenient Mode of Administering Remedies.

PLACE the dog upright on his hind legs, between the knees of a seated person, with his back inwards (a very small dog may be taken altogether into the lap). Apply a napkin round his shoulders, bringing it forwards over the fore legs, by which they become secured from resisting. The mouth being now forced open by the pressure of the fore finger and thumb upon the lips of the upper jaw, the medicine can be conveniently introduced with the other hand, and passed sufficiently far into the throat to insure its not being returned. The mouth should now be closed, and it should be kept so, until the matter given has been seen to pass down. When the animal is too strong to be managed by one person, another assistant is requisite to hold open the mouth; which, if the subject is very refractory, is best effected by a strong piece of tape applied behind the holders or fangs of each jaw.

The difference between giving liquid and solid medicines is not considerable. A *ball* or *bolus* should be passed completely over the root of the tongue, and dexterously pushed some way backwards and downwards. When a *liquid remedy* is given, if the quantity is more than can be swallowed at one effort, it should be removed from the mouth between each deglutition, or the dog may be strangled. The head should

also be completely secured, and a little elevated, to prevent the liquid remedy from again running out.

Balls of a soft consistence, and those composed of nauseous ingredients, should be wrapped in silver or other thin paper, and greased, or they may occasion so much disgust as to be returned. Medicines wholly without taste, as mercurials, antimonials, &c. may be frequently given in the food; but sometimes a considerable inconvenience attends this, which is, that, if the deception is discovered by the dog, he will obstinately refuse his food for some time afterwards. The purging salts may also be sometimes given in food, being mistaken by the animal for the sapid effect produced by common salt.

Dogs are not only very susceptible of disease, but, when ill, they require great attention and care to insure their recovery. It is however too common with many persons to neglect them under these circumstances; and if they are placed in a cold room, or an outhouse, with stale or broken victuals and water placed before them, it is frequently all the attention they experience: unless, perhaps, to all this may be added, something of doubtful efficacy as a *remedy*. But when we consider how very tender many of these animals are rendered by confinement and artificial habits, it will be clear that, under sickness, they must require peculiar care and attention. Warmth seems particularly congenial to the feelings of sick dogs, and is often of more consequence to their recovery than is imagined. Many of their diseases degenerate into convulsions when the sick are exposed to cold. Cleanliness, and a change of their litter or bed, is very grateful to them in many cases of putridity, as in distemper, &c. Complaints purely inflammatory, it is evident, must be treated by abstinence; but, in all others, the weakness present must be combated by nutritious aliment.

It is not sufficient, as is often imagined, that food, particularly of the common kind, be merely placed before a sick dog. In many such cases, the appetite wholly fails; and, if even the animal could eat, the stomach would not at this

time digest hard meat, or any of the common matters usually given to dogs. In these instances, nourishment is best received from strong broths, gravy, jelly, or gruel ; or, perhaps, best of all, from thick gruel and a strong animal jelly, mixed ; for I have always remarked, that no simple liquid will afford equal nutriment with one thickened with flour or other meal.

Sick dogs are also very fanciful, and often require enticing to eat, by the same arts we use towards children. Fresh meat of any kind, but very lightly broiled, will sometimes tempt them. At others, pork, in particular, is highly relished ; while, in some cases, raw meat alone will be taken. But in almost all cases, if the slightest inclination for food remains, horse-flesh, lightly dressed, will be found irresistible ; so great is their preference for this food. The extreme fickleness of their appetite, when sick, makes it necessary that every kind of edible should be tried, as that which is voluntarily taken will always digest more readily than that which is forcibly given. But in all illnesses of long continuance, when food is obstinately refused, nourishment should be forced down. In cases requiring active cordials, ale may be mixed with gruel or gravy. Wine is seldom advisable, from its disposition to inflame the bowels. I have, however, now and then used it with benefit in highly putrid cases of distemper ; in which instances forced meat balls also prove both nutritious and an active cordial.

The intension of mental feeling in the dog is at all times great, but under disease it appears doubled ; and although it may, to a superficial observer, look like an affectation of tenderness, it is a very necessary caution to observe, that at these times their minds should be soothed by every means in the power of those around them. Harshness of manner and unkind treatment, in many instances, very evidently aggravate their complaints. Under some diseases their irritability of mind is particularly apparent. Distemper is a very prominent example of this. I have several times witnessed an angry

word spoken to a healthy dog, produce instant convulsions in a distempered one who happened to be near ; and the fits that come on spontaneously in distemper, almost instantly leave the dog by soothing notice, so open are they to mental impressions. Joy and surprise will also often prove injurious to them when they are very weak.

Even among those who conceive themselves minutely acquainted with dogs (and who probably are so with the sporting kinds, and with such as live more natural lives in the open air of the country, with the advantages of moderate feeding and due exercise) there will be many who will regard these extreme cautions as unnecessary. The number and variety of the diseases quoted will also probably excite their surprise ; and, unaware of the existence even of many of them, they will be apt to consider the diversity of symptomatic appearances described, the cautions insisted on, and the minuteness of detail in the medical treatment, as, in a great degree, superfluous : but a little further inquiry will satisfy such, that no animals can differ more widely than the dogs they are accustomed to, and those that are born, bred, and perhaps constantly reside in cities, towns, or other confined situations. These instructions are necessarily confined to no one meridian : as well as the more healthy country animal, they embrace also the pet, and pampered favourite, that is perhaps im-mured, twenty-three out of the twenty-four hours, in a hot drawing or bed-room, breathing the same confined air, eating the same luxurious food, and exercising in the same easy carriage, with his owner. A life so wholly artificial alters the mental and bodily properties to such a degree, of such as are subjected to it, that their constitutional tendency to disease is nearly as great as that of those they belong to : under disease their irritability is nearly equal, the diversities of their symptoms nearly as numerous ; and, consequently, that they require every portion of that caution and attention I have prescribed to insure their recovery.

The alphabetical arrangement of the former edition has been objected to by the professional critic, as not sufficiently scholastic for the reputation of a teacher of medicine. It was then, as it is now, my anxious wish to make the *Canine Pathology* extensively useful, and a work of general reference among the diversified classes whose interest, or amusement, may connect them with dogs. A nosological arrangement of diseases, expressed in appropriate terms of art, would undoubtedly have given to the whole an appearance of greater medical erudition; and had I written solely with a view to professional fame, or had I intended the work for the exclusive reading of those who had been medically educated, I should certainly, both in the language and arrangement of it, have differed from my present mode, although the substance would have been still the same. But as the professional reader will not find the instructions contained in it less efficacious for being divested of medical technicalities, and as the unprofessional one will much more readily comprehend them in their present form, so I hope I shall stand excused by all parties for having continued in the most plain and simple track of alphabetical arrangement; which, although it precludes systematic display, yet greatly increases the facility of reference. For this reason, likewise, I have made the Pathology not only a catalogue of *diseases*, but of *symptoms* also; by which means those unaccustomed to professional reading may ascertain the existing disease by the leading feature or symptom of it. In compliance, however, with medical taste, I have, in this edition, given the *prescriptions* in the chemical or pharmaceutical terms, subjoining however, as before, the popular and long received names of the various medicaments in use.

I hope that some dependance may be placed on the curative plans detailed; they are the result of twenty years' extensive practice, in each year of which I have examined from two to three thousand sick dogs. The different ailments, as they occurred, were diligently attended to; the operations of the various remedies used were carefully observed; and the ge-

neral result was accurately noted. In such cases as terminated fatally, the morbid appearances were attentively examined, by which much light was thrown on future instances of a similar description.

Age of Dogs.

Dogs do not, like horses and cattle, present any exact criterion of their age; nevertheless, attention to the following appearances will assist us in determining the matter.

At about four years, the front teeth lose their points, and each of them presents a flattened surface, which increases as the age advances; they likewise lose their whiteness. In dogs fed much on bones, and in those who fetch and carry, as it is called, these teeth suffer very much, and are sometimes broken out, while the dog is yet young. The holders, or tusks, are also blunted by the same causes. At seven or eight, the hair about the eyes becomes slightly grey. Gradually, likewise, a greyish tint extends over the face; but it is not till ten, eleven, or twelve years, that the eyes lose their lustre. When they become dim, general decay proceeds rapidly, though some last fifteen, sixteen, or seventeen years; and I have seen a mother and son vigorous at twenty and twenty-one years old. Such instances as the latter must, however, be considered as rare.

Now and then an extraordinary exception occurs:—I once saw a small French dog, which I was assured had reached his twenty-fourth year, and which, at the time I saw him, was still vigorous and lively. I am not aware that much difference exists between the various breeds, as to the age they arrive at. Spaniels I, however, think rather long-lived; while terriers, on the contrary, I have seldom observed very old. The *natural* life of the dog may be considered as ranging between fourteen and fifteen years. Domestication has tended, in some degree, to curtail the period,

but not so much as might be expected *, considering the powerful operation of artificial habits.

Alteratives.

THERE are many states in which, although there appears no very serious disease, yet a sufficient remove from health exists to make some *alteration* in the constitution necessary. When this is the case, the end may, in general, be attained by *alteratives*. An actual disease may also exist, whose remove can be best effected by a slow gradual alteration to be brought about in the constitution by what are, from this circumstance, termed *alteratives*. Hence excessive fatness, chronic coughs, fits, glandular swellings, mange, &c. &c. are best attacked by these sorts of remedies.

Various substances are used as *alteratives*; as antimonials, and the different preparations of mercury, iron, and tin. The nitrate of potash (*nitre*), the supertartrate of potash (*cream of tartar*), aloes, salines, &c. &c. &c., are excellent alteratives. Tartarized antimony (*emetic tartar*) often proves a very useful alterative in the chronic asthmatic cough to which dogs are subject, given as an emetic once or twice a week in doses of one grain to three. Antimonial powder, or James's Powder, may be also given with benefit as an alterative in similar cases. Crude antimony is often found useful in diseases of the skin; but it is unfortunately very un-

* BUFFON calculates the length of life in the dog from the time of his growth. "La durée de la vie est dans le chien, comme dans les autres animaux, proportionnelle au temps de l'accroissement; il est environ deux ans à croître, ils vit aussi sept fois deux ans."—BUFFON, *Hist. Nat.* tom. v, 223.

ÆLIAN considers fourteen years as the natural period of life in dogs.—ÆLIAN, *De Nat. Animal.*, lib. iv, c. 41.

Some of the antients have stated that a difference exists in the duration of life between the sexes, but experience justifies no such distinction.—ARIANUS *de Venatione*, c. 32.

certain in its operation : that is, some dogs will bear a considerable quantity, while others cannot even take a small one without violent sickness. The usual dose is from half a scruple to half a dram. Nitrate of potash (*nitre*) is a very useful alterative to dogs for hot itching humours and redness of the skin, in doses of four grains to ten. The supertartrate of potash (*cream of tartar*) may be also given as an alterative with benefit, in larger doses, in the same cases. All the preparations of mercury, though excellent alteratives, require great caution when frequently repeated, or regularly given ; for dogs are easily salivated, and salivation produces very hurtful effects on them.

Dogs, when fully salivated, lose their teeth very early, and their breath continues offensive through life. The whole of the feline tribe are also easily affected by mercury. I was requested to inspect the very large lion that so long graced PIDCOCK's Menagerie. It may be remembered by many, that this noble animal's tongue constantly hung without his mouth ; which arose from his having been injudiciously salivated, many years before, by a mercurial preparation applied by the keeper for the cure of mange. The submuriate of mercury (*calomel*) is, likewise, very irregular in its action on dogs ; I have seen eight grains fail to open the bowels of even a small one, while, on the contrary, I have been called to a pointer fatally poisoned by ten grains. It forms, however, a useful auxiliary to purgatives, in doses of three to six grains ; and as it not unfrequently acts on the stomach, so it may be used with advantage as an emetic in some cases, particularly in conjunction with tartarized antimony (*tartar emetic*). When, therefore, a purgative is brought up again, in which calomel was a component part, it may be suspected to arise from this source, and, if it is necessary to repeat the purge, the mercurial should be omitted.

The various preparations of iron form excellent alteratives in some cases of weakness, particularly of the stomach and bowels, for which affections they act best when united with the aromatic bitters. Sulphur is the alterative remedy in the

most general use of any ; but its properties in this respect are much overrated. It is a very common practice to put a roll of brimstone into the pans from whence dogs drink their water ; the impregnation of which, by means of the sulphur, is expected to keep the animals in health : but so completely insoluble in water is brimstone in this state, that a roll of it so kept would not lose ten grains of its weight in ten years, nor would it become in the least altered in its quality.

Sulphur in powder, or flour of brimstone, as it is termed, is, however, more active ; but even in this form it often passes through the bowels nearly unchanged. It proves, in other instances, slightly purgative. In one disease, however, it seldom fails to do good, even unaccompanied by any thing besides, which is the piles, to which complaint many dogs are very subject. In conjunction with other alteratives of the cooling, cleansing kind, it proves also useful in mangy eruptions, canker, &c. ; and I am disposed to think, that one part of supertartrate of potash (*cream of tartar*), with two parts of sulphur, forms the best alterative that can be given in these cases. Externally applied, the benefits of sulphur are much more apparent, and are too well known to need enumeration.

The cases that require the use of alteratives are numerous : when judiciously given, they keep dogs cool, and obviate the ill effects of improper feeding and close confinement. In sporting dogs they often prove very useful by removing their useless fat, assisting their wind, and purifying their juices * ; for no dog will hunt well whose secretions are tainted by mange or other eruptions. Alteratives prevent the accumulation of milk, as well as the coagulating or coreing of it in the teats of bitches. In short, old mange, cankered ears, chronic coughs, swelled glands, and all diseases of long

* Modern pathology allows no primary vitiation of the blood : but whether this theory may not have been carried too far by the partisans of JOHN HUNTER, may be a matter of doubt. However, I have no alternative, in a domestic and popular treatise, but to excite ideas that are generally familiar, and to use language in common acceptation.

standing, are best treated by *alteratives*, and all diseases that are brought on by confinement and artificial habits are best prevented by them.

Asthma.

Dogs are subject to a diseased alteration in the organs of respiration, which, however it may differ from some of the varieties of the human complaint of that name, and whatever dissimilitudes are observable in its general origin, progress, and termination, yet it so nearly resembles that type of the disease called the aërial or dry human asthma, as to justly warrant the application of this popular term. The inhabitants of country towns and villages can form no just idea of the prevalence and destructive nature of this disease in cities, and confined neighbourhoods: in such situations it is a most common complaint, and shortens the lives of thousands. Dogs appear to have no constitutional liability to the disease; on the contrary, its origin may be always traced to the operation of accidental circumstances; as, close confinement, over feeding, and an extraordinary accumulation of fat; which latter is the inevitable consequence of the former, and may be considered as the *immediate* cause of the complaint itself. According to the degree in which these predisposing causes have been applied, the disease appears earlier or later in life. In some it comes on at three or four years old: in others, rather less improperly managed, it may not appear until seven or eight: but, sooner or later, most dogs, confined in close situations, deprived of exercise, and fed with heating and luxurious food, become subjected to it, and as certainly have their lives shortened by it.

The disease is usually very insidious in its attack, commencing by a slight cough, which returns at uncertain intervals, and is therefore hardly noticed. Gradually, however, the cough becomes more frequent and troublesome, and assumes its peculiar harsh, dry, and sonorous character; and

is then often mistaken for a bone in the throat, or for sponge having been designedly given. The cough is now excited by every change of temperature, food, or position ; until, at length, it is almost incessant, and even sleep is interrupted by it. In these latter stages the breathing becomes affected ; sometimes it is very laborious and painful. The irritation of the cough frequently excites nausea and sickness, but nothing is brought up but a little frothy mucus, which does not come from the stomach, as is supposed, but from the bronchial passages, where its presence forms the source of the irritation. When the disease is fully formed, its further progress is quicker or slower as the exciting causes are continued or discontinued. The modes in which it produces its fatal termination are also various.

In some cases, the irritation of the cough, and the accompanying hectic, emaciates and wears down the animal to a skeleton. In others, the congestion within the chest stops respiration, and kills by a sudden suffocation ; or the obstruction the blood meets with in its passage through the heart occasions accumulation in the head, and convulsive fits are the precursors of death. Now and then a rupture of the heart, or of some large blood-vessel, suddenly destroys : but by far the most common termination of the complaint is in dropsy, or serous collections within the chest or belly, or both, but most frequently of the latter. In these cases, the limbs and external parts of the body waste, but the belly increases in its size ; the hair stares ; the breathing becomes most laborious ; and, in the end, suffocation ensues.

The morbid appearances, on dissection, are not always the same ; but it may be remarked, that some disorganization is always apparent. In the majority of cases, the visceral marks of disease are very considerable. In some few, a rupture of the air cells, very similar to what occurs in some broken-winded horses, is apparent ; in which cases, the air extravasating through the parenchymatous substance of the lungs, an emphysematous appearance takes place, and they slightly crepitate under the touch. In some cases, serum has

occupied the air cells: in others, a morbid translation of the external fat was found to have taken place from without inwards; by which the diaphragm, large vessels, and the interstitial membranes of the chest, becoming obstructed and overcharged with adipose substance, the respiratory functions were at length totally suspended. But the most common appearance that the lungs have presented, in asthmatic subjects, after death, has been that of a total change of their natural structure into a hardened granular blueish mass throughout the whole substance.

The *cure* of the disease is attended with much uncertainty, unless it be attempted in the first stages, and before the disorganization of the respiratory organs has become too great for reduction; but when it has been of long standing, although it may be palliated, it is hardly ever completely removed. As confinement and over-feeding are very common causes of the complaint, so it is evident that an attention to these particulars is essentially necessary to the cure. It is unfortunate that the accumulation of fat is, in some dogs, so much a disease, that even a very small quantity of food will still fatten. The food in these cases must, however, be so reduced as to produce absorption of the fat, or it will be in vain to hope for amendment: means to this effect are detailed under the head FEEDING. An airy place ought to be allowed the animal to sleep in; but, above all, regular and judicious exercise must be given;—not violent, but gentle, and long continued. The absorption of the accumulated fat will be materially assisted by a regular exhibition of purgatives once or twice a week. Bleeding now and then gives a temporary relief, and in the incipient stages, when there is active inflammation, it is proper; but in the advanced stages it seldom does much good.

Among the various plans of treatment I pursued for the cure of this complaint, that which proved most efficacious, was a continued course of emetics given at regular intervals, as twice a week. In the intermediate days alteratives were administered, with the occasional use of a purgative, provided

the dog was strong, fat, and plethoric; otherwise this was dispensed with. The use of emetics and alteratives should be long continued to ensure permanent benefit. The following alterative may be tried with hope of success: the form of emetic may be seen by a reference to the article EMETICS.

Submuriate of mercury (<i>calomel</i>).....	half a grain
Nitrate of potash (<i>nitre</i>)	5 grains
Supertartrate of potash (<i>cream of tartar</i>) .	10 grains
Antimonial powder	2 grains.—Mix.

This may be given either as a powder, or it may be made into a ball with honey; the dose being repeated every morning; and, in very bad cases, every evening also. The quantity of the articles may be augmented, or diminished, according to the size of the dog; but the above is a medium proportion. On the morning that the emetic is given, the alterative should be omitted; and it will also, in cases where the alterative is repeated night and morning, be prudent to watch the mouth, that salivation may not unexpectedly come on. If this should happen, the medicine must be omitted some days. Where also the calomel has been found to disagree, I have substituted the following alterative with benefit:—

Nitrate of potash (<i>nitre</i>)	8 grains
Tartarized antimony (<i>tartar emetic</i>)	1 quarter of a grain
Powdered foxglove.....	half a grain.—Mix.

This may be given as the other, and alternated with the emetic also.

In some cases of long standing, where the cough has been very harsh, noisy, and distressing, I have added ten, twenty, or thirty drops of tincture of opium (*laudanum*), or the eighth part of a grain of opium, to each alterative with advantage. In other instances, the cough has been best allayed by an evening opiate of double the strength before prescribed.

I have, now and then, experienced benefit also from the use of the balsamic gums, which may be all tried, therefore, in obstinate cases. Relief has been obtained likewise from the following, given every morning:—

Powdered squill	half a grain
Gum ammoniacum, powdered	5 grains
Balsam Peru	3 grains
Benzoic acid	1 grain
Anisated balsam of sulphur to form a ball.	

Or, the following:—

Inspissated white juice of the garden lettuce ...	half a dram
Tincture of balsam of Tolu	1 dram
Powdered gum arabic and extract of liquorice .	1 ounce each
Make into balls, and give one night and morning.	

Mr. YOUATT has, I believe, found benefit in asthmatic cases from the exhibition of the prussic acid: but the powerful nature of this remedy requires *professional* skill when it is administered.

Astringents.

ASTRINGENTS are substances which, from their bracing quality, are used to check immoderate secretions or fluxes. When used to restrain a flux of blood, they are termed styptics: of this kind are alum, dragons blood, &c. A very useful domestic styptic is puff ball; so are mole's-fur and cobweb. All these are considered *external* astringents, and are principally applicable to wounded blood vessels: but there are *internal* astringents also, applicable to various cases.

For instance, there appears oftentimes in dogs a secretion or flow of blood from the penis; now and then it proceeds higher up from the bladder or kidnies. The same also occurs in bitches, from the womb or the vaginal sheath. In these cases, a ball composed of two grains of alum, with twenty grains of catechu, mixed and given once or twice a day, proves a moss excellent astringent. The superacetate or sugar of lead, also, I have found sometimes useful in similar cases; but I have not ventured to give more than from one grain to two, even to a large dog, which has been repeated night and morning. When used as an injection into the womb for the same purpose, it often produces violent

cholic. An infusion of oak or elm bark may, therefore, be more properly injected in this way in such cases.

The astringents used to check diarrhoea, or looseness, are various. Rice milk, suet and milk, or boiled starch, are either of them proper as an astringent diet. Starch clysters may also be used. Opium, by the mouth, is sometimes useful, in doses of half a grain to a grain, or more. Prepared chalk, with gum arabic, and ipecacuanha, united in proper proportions, forms, however, the best astringent I know of.

—See LOOSENESS.

Bathing.

BOTH the warm and the cold bathings of dogs are attended, in many cases, with the happiest effects. *Warm bathing* seems peculiarly useful in many complaints, and it is sometimes of itself a sovereign remedy. In inflammations, particularly of the bowels, it is highly proper. In lumbago and other rheumatisms, which are very common to dogs, it is attended with the best effects. In obstinate costiveness, it will often relax the bowels when every other remedy has failed. When internal injuries have been received from accidents, it relaxes and prevents inflammation. In pupping, sometimes great difficulty is experienced ; in which cases the warm bath frequently relaxes the parts, and the young become more easily expelled. In convulsions and spasms it is also excellent. In obstructed urine, from an inflamed state of the neck of the bladder, it has proved a most efficacious remedy.

When a *warm bath* is used for a dog, the *heat* should be regulated according to the case. In inflammations it should be considerable, and in rheumatisms also ; but it must be remembered that, from habit, many human persons can bear, without inconvenience, a heat that would be most distressing to a dog ; consequently, when it is attempted to ascertain the heat by the hand alone, this circumstance should be considered. 100 to 102 degrees of FAHRENHEIT's thermometer

is a very considerable heat to dogs, and is only proper in violent inflammations and active rheumatisms. For internal bruises, for spasms, or as a relaxant, 96 to 98 degrees is sufficient. The *continuance* in water is also to be regulated according to circumstances. To relax, as in the labour or pupping of bitches, in slight spasms, or in cases where the animals are very weak, or when the bathing is to be renewed daily, ten minutes is a sufficient time to keep them in the water. But in suppression of urine, in violent spasms, costiveness, inflammations, particularly of the bowels; fifteen or even twenty minutes are not too much. When faintness comes on, it will be seen by the dog's panting and distress, when he should be removed from the water, particularly if it is a case wherein fainting would be prejudicial, as in a pupping bitch. The water should come all over the animal, except the head; and when any one particular part is affected, that part ought to be rubbed, during the bathing, with the hand. When the dog is removed from the water, the utmost care should be observed to avoid his taking cold by exposure. He should be first rubbed as dry as may be by a change of cloths, and then be put into a clothes basket, wrapped up in a blanket, and there confined till thoroughly dry.

Cold bathing is also, in some instances, very useful, particularly in the spasmotic twitchings that succeed distemper; and in some other cases of habitual weakness, as rickets, &c.: but, for dogs in health, I am convinced that bathing is not so salutary as is often supposed.—See the article WASHING OF DOGS.

Bladder, inflamed.

See INFLAMED BLADDER.

Bleeding.

DOGS are much benefited by bleeding in many diseases, as inflammations of the lungs, stomach, bowels, &c. In some cases of mange, in dry inflammatory coughs, and in fits, bleeding is very useful also.

Dogs may be conveniently bled by the jugular or neck vein, with a fleam or common lancet; but the latter is much preferable. A ligature of tape or riband being put round the lower part of the neck, and the head being held up, the vein will swell and protrude itself on each side of the windpipe, about one inch from it. It will, however, be necessary previously to cut the hair away if it is very thick, after which the puncture can be easily made with a common lancet. Nothing is necessary in general cases to stop the bleeding, but to remove the ligature; nor is any pin, plaster, or bandage, requisite for the orifice. When circumstances prevent blood being drawn from the neck, the ear may be punctured, or an incision may be made withinside of the flap of it, but not through its substance. Or the tail may be cut in desperate cases; but, when this is done, it is better to cut off a small piece than to merely make an incision underneath; for I have seen, when this has been injudiciously done, the whole tail mortify and drop off.

The quantity of blood drawn should be regulated by the size of the dog: for a very small dog, one or two ounces are sufficient; for a middling sized dog, three or four ounces; and for a large dog, five, six, seven, or eight ounces, according to the size and strength of the patient, and the nature of the disease he labours under.

Blindness.

DOGS may lose the sight of one, or of both eyes, by the operation of several causes. Distemper will often produce an

abscess destructive to one or both. Ophthalmia, or simple inflammation of this organ, is another source of blindness. Cataract sometimes attacks one or both eyes. Dropsy, also, of the humours within the eye now and then occurs, and destroys vision.—The treatment of these several affections is referred to DISEASES OF THE EYES.

Blisters.

BLISTERS are useful in many of the complaints of dogs, and, in some instances, they are absolutely necessary. Blisters do not usually vesicate and detach the skin, as in the human subject; but they irritate and inflame the surface sufficiently to answer every purpose required. Blistering substances for dogs are various; but the best is that, in common use for the human subject, made of Spanish flies, applied as a *plaster*, and carefully secured by a bandage. When, however, it is intended, as in very active inflammations, to raise a speedy irritation, blistering *ointment* should be made use of; and, to render it still more active, it may be thinned with oil of turpentine. This should be well rubbed into the skin, and a covering carefully secured over the part after. The application may be repeated, in urgent cases, every three or four hours.

A very quick inflammation may also be raised by common table mustard spread over any part. In inflammations of the stomach, and particularly of the bowels, an excellent and lasting method of irritating the skin may be practised by means of a sheep's or any other hide newly stripped off, and immediately applied and secured to the part. The skin should, however, be first stimulated with hartshorn or turpentine. It should be kept in mind, that vesicatories irritate and render dogs very refractory; they should therefore be very closely watched when under their action.

Blood, flowing.

See ASTRINGENTS.

Bloody Urine.

See URINE, BLOODY.

Bowels, constipated.

See COSTIVENESS.

Bowels, inflamed.

See INFLAMED BOWELS.

Bowels, loose.

See LOOSENESS.

Breeding in Bitches.

THE reproduction of the animal form is brought about, in dogs, by desires that are not constant, but which, among the wild breeds, recur once a year; and at such a time of it, that the offspring may be produced under the most favourable circumstances to their well being, that is, in the spring. But in domesticated dogs, the powerful agencies of cultivation and artificial habits have materially altered many of the phenomena attending the production of their young; and as shelter and nouriture are found for them at all times of the year, so the periods of their *œstrum*, or *heat*, return at un-

certain intervals, as six, seven, or eight months, as confinement or highly stimulating food may hasten the sexual excitement*.

The *heat* or *aestrum* of bitches is the consequence of a sympathetic action between all the organs concerned in generation, which, at these times, become more highly susceptible and vascular: this shews itself by a swelling of the external parts, and a discharge from the vulva. There are likewise strong marks of general excitement throughout the body; the plethoric and irritable state of which is such, that those bitches that have been before subject to fits, are now peculiarly liable to them; and convulsions often appear at this time in those that have not before been affected by them. It is evident, therefore, that the precautions of cooling food, judicious exercise, and opening medicines, are necessary at these periods, for the young and delicate particularly; and they are still more so for such bitches as are intended to be debarred from the dog; for, in these latter cases, that excitement remains long in action, which yields easily to the satiety of sexual intercourse. It is not, however, prudent, for several reasons connected with the health of the animals, to prevent females from breeding. Nature almost invariably punishes extraordinary deviations from her established laws, of which the reproductive system is one of the most important. Breeding, therefore, is so much a healthy and necessary process, that bitches debarred from it rarely remain unaffected by disease, and more especially those whose confined and luxurious lives require the various outlets to the superabundance of the system, that are opened during the processes of breeding and rearing of young. In such, barrenness is particularly hurtful, and greatly assists in bringing on, sooner or later, enormous and diseased collections of fat either uni-

* It has been attempted to bring on heat in bitches by stimulating injections, and it now and then succeeds: but as it is an unnatural process, and as the constitutional sympathy cannot be supposed to be so fully excited as to produce a general consent of parts, impregnation does not always follow the intercourse, and, when it does, the progeny are usually unhealthy.

versal or partial. The partial collections frequently shew themselves by a swelling on each side of the loins, produced by a deposit of adipose substance around each ovaria. In other cases, particularly where barrenness is occasional, the mammae, or milk glands, become affected with small indurations, which eventually end in confirmed scirrhi or open ulcers.

—See SCIRRUS. A more immediate evil likewise often awaits the preventing of dogs from breeding, which is, a troublesome accumulation of milk in the mammae, or teats; for the various organs of generation have such a sympathetic connection with each other, that when females are denied the dog, still, when the customary period of gestation or going with young has passed, milk will nevertheless appear in the lactiferous glands. This sometimes occurs to a very considerable degree, and occasions much heat and distention. It is more particularly observed in such females as have already had young ones, and they invariably suffer most in the future privation. In such cases, it is proper gently to press out the milk daily, which will greatly relieve the animal; the teats should also be frequently bathed with a mixture of brandy and vinegar a little weakened with water. Food should be given sparingly, and an occasional dose of physic will prove useful*.

* The author of the *Treatise on Greyhounds* (whose opinion, as an observant sportsman and breeder, ought to have due weight), remarks, that where breeding has been *always* prevented, he has never found any injurious effects whatever to follow from it. It is undoubtedly true, and it accords with my own experience, that the constitution having once been subjected to the reproductive process, or, in other words, that bitches once allowed to breed are more liable to suffer from the future deprivation of it than those in whom the constitutional sympathies have never been fully excited throughout the generative system. It may also be remarked, in answer to the above statement, that sporting and other dogs accustomed to moderate feeding and regular exercise (which are evidently those Sir W. C. draws his inferences from), will bear this deprivation with much greater impunity than those that are more confined and altogether more artificially treated. But as a law in the animal economy, and as one applicable to the general state and constitution of the dog, the reproduction of the species is a necessary, a natural,

Bitches in heat are very cunning, and elude the greatest vigilance used to confine them from the dog. When, therefore, it is intended to prevent them from breeding, the greatest care is requisite to prevent their escape. For want of due caution in this respect, numbers of them are every year destroyed ; for a bitch having eluded the attempts to restrain her, will naturally unite with the first dog she meets with, which, should it happen to be one of a much larger kind than herself, will so much influence the size of the progeny, that she will be very liable to die in pupping, from the inability to bring forth. When, therefore, a bitch has so escaped, it will be prudent immediately to follow her; not only to prevent the intercourse altogether, but to guard against the brutal folly of boys and others, who, when it has taken place, often throw cold water over the animals, or tear them away from each other by violence. I have seen the parts of the female actually suffer inversion from this ; other injurious consequences have also very frequently followed. To the dog, likewise, it is no less hurtful, by fatally rupturing the blood-vessels of the parts *, or by other lacerations.

Impregnation takes place sometimes at the first copulation, in others not until the second, third, or fourth ; and in some

and, consequently, a healthy process. This is alike reconcileable to fact as to theory ; for attentive observation extended to all the varieties of the species, and to the varied circumstances under which they are placed, will shew, that the suffering of bitches to breed, not only tends to keep them in health, but that those which have been allowed to bring up numerous litters, have more invariably attained a great age than such as have been debarred the intercourse. It may be added, that the same is observed in the human, where the average of longevity among females is decidedly in favour of the married, compared with the single.

* This retention of the male within the female parts after the act has been *apparently* completed, arises from a peculiarity of structure in both. In the male, the corpora cavernosa have two large lateral protuberances, which, when distended with blood, effectually retain the penis within the vagina of the female, till the venereal orgasm has entirely ceased. The clitoris of the female also partakes of a similar structure, and firmly retains the penis *in coitu*, by a distended ring. The same structure is apparent in all the canine congenera.

cases I have known, from decided proofs, that impregnation did not ensue until the seventh warding. Dogs should be suffered, therefore, to remain together some days to insure prolific intercourse. During gestation, dogs do not appear to suffer much derangement of system; some, however, appear to be listless, nauseated, and averse to particular foods; and most of them are more thirsty at this than at other times. It is not easy to detect whether bitches are in pup until the fourth or fifth week after warding: about this time the teats enlarge, the flanks fill, and the belly assumes a roundness unnatural to it at others. About the seventh week, the belly becomes pendulous, and the future increase is not so observable as the previous. In the last week of pregnancy, the contents of the belly seem to incline backwards, the vulva increases in size, and a slimy matter (to soften and lubricate the parts) often issues. Pupping usually comes on the sixty-second, sixty-third, or, at farthest, on the sixty-fourth day. A quarter or half an hour, and sometimes a longer time, intervenes between each young one. I have known a solitary puppy appear on the seventieth day from the last intercourse, and that in a case where superfœtation was improbable.—See PUPPING.

Dogs are certainly capable of superfœtation; that is, impregnation may take place at more than one warding, and that by distinct mates. The fact was long ago admitted by naturalists and physiologists*; since which time numerous circumstances have fallen under the notice of sportsmen that confirm the matter. I have, in several instances, seen whelps

* In the superfœtation of brutes, is there not reason to suppose that the germ is contributed from each ovaria in succession? or do the ova or germs present themselves indiscriminately from both? The interesting experiments of Dr. HAIGHTON, related in the *Philosophical Transactions*, 1797, p. 159; and by Mr. CRUICKSHANKS, *ib.* p. 197, tend to throw light on this curious subject.

Superfœtation seems extended also to the human; instances of this are recorded in BLUMENBACH's *Institutions of Physiology*, and in WHITE's work on the Regular Gradation of the Human Race.

of the same litter with appearances which bore evident marks of distinct origin, and where the future disproportion in size and qualities, and all the distinctive marks of varied species, clearly evinced that more than one male was concerned in the process. Superfoetation is apt to be confounded with, or its phenomena are sometimes accounted for, by another process, still more curious and inexplicable, but which is wholly dependent on the mother. I allude to the impression made on the mind of the female parent, and conveyed by her to the foetuses within her, by which antecedent impressions in favour of a particular dog will be stamped in characteristic marks on the progeny begotten by another totally different from him. This subject will be more fully treated of in the next article: it is only necessary to remark here, that in cases of superfoetation, the size, form, and qualities of the additional progeny all fully betoken their origin. In these instances of *sympathetic deviation*, the form, size, and character, are almost wholly the mother's; but the *colour* is as certainly the favourite's, with, perhaps, a few shades of characteristic blendings intermixed.

Breeding and Rearing of Puppies.

As gestation has not yet been at all considered as it regards the progeny, and as something yet remains to be stated that is immediately connected with the mother; so it will probably be more convenient to continue the subject, to its completion, here, in preference to removing it (as in the former editions) to its alphabetical situation under the head *Puppies*.

The extreme care that is bestowed to perfect some breeds of dogs, and to preserve such varieties in their utmost purity, is known to every one. To the sportsman it becomes a most interesting subject; and to the breeder of domestic animals in general it is no less important. I propose, therefore, to consider it, both philosophically and practically, rather more

at length in this than in the former editions. To examine the subject in all its bearings, it will be necessary to begin *ab ovo**, and to trace the animal from the very germ or ovum of the mother, which, being vivified and called into action by the sympathetic influence of the seminal fluid of the father, bursts into life, and, after a gestatory period of sixty-three days, presents (with a fraternity similarly situated) an organized being, bearing the characteristic stamp of its species, and usually a close resemblance to its parents. It is, however, necessary here to notice a curious exception which now and then occurs to this usual consanguineous resemblance, apparently occasioned by some mental impression received by the mother. This impression being always present to the imagination, appears to serve as a stamp for some, if not for all, of her future progeny. The existence of this curious anomaly in the reproductive or breeding system, is confirmed by facts of not unfrequent occurrence. I had a pug bitch whose constant companion was a small and nearly *white* spaniel dog, of *LORD RIVERS'* breed, of which she was very fond. When it became necessary to separate her, on account of her *heat*, from this dog, and to confine her with one of her own kind, she pined excessively; and notwithstanding her situation, it was some time before she would admit of the attentions of the pug dog placed with her. At length, however, she did so; impregnation followed, and at the usual period she brought forth five pug puppies, one of which was elegantly *white*, and more *slender* than the others. The spaniel was soon afterwards given away, but the impression remained; for at two subsequent litters (which were all she had afterwards) she presented me with a *white* young one, which the fanciers know to be a very rare occurrence†.

* *Ex ovo omnia.*—*HERVEY.*

† It is a curious circumstance, that each succeeding white puppy was less slender in form than the former, though all were equally white; which shewed, as I have before stated, that this mental influence extends less perfectly to the individual form, than to its external characters, particularly of colour; and also that it lessens by time and absence. When, therefore, pups of com-

The late Dr. HUGH SMITH (who was a sportsman of no mean celebrity) has related a similar instance of a very favourite female setter that followed his carriage. Travelling in the country, she became suddenly so enamoured of a mongrel that followed her, that, to separate them, he was forced, or rather his anger irritated him, to shoot the mongrel, and he then proceeded on his journey. The image of

pletely different forms and kinds proceed from one litter, superfœtation has occurred, and not mental influence. The Rev. R. LASCELLES, in his Letters on Sporting, p. 250, relates a case of a greyhound bitch, entrusted to the care of a servant, which whelped one perfect greyhound and six complete curs: the curs were the likeness of the dog she domesticated with in common; the single one resembled the greyhound she was taken to during her heat. There is little reason, therefore, to doubt that the bitch had been previously lined by the cur, and the single greyhound pup was the effect of superfœtation. I mention this to shew how easy this mistake between two different causes may occur, and how they may be distinguished. I was not fortunate enough to rear either of my white puppies: the late LORD KELLY offered me fifteen guineas for one of them at three months old.

LORD MORTON bred from a male quagga and a chesnut mare. The mare was afterwards bred from by a black Arabian horse; but still the progeny exhibited, in colour and mane, a striking resemblance to the quagga. D. GILES, Esq. had a sow of the black and white kind, which was bred from by a boar of the wild breed, of a deep chesnut colour: the pigs produced by this intercourse were duly mixed, the colour of the boar being in some very predominant. The sow was afterwards bred from by two of Mr. WESTERN's boars, and in both instances chesnut marks were prevalent in the litter, which, in other instances, had never presented any appearance of the kind.—*Phil. Trans.* 1821.

The former cases tend to confirm what I have before remarked, that the mental influence excited on these occasions extends less to the internal organization than to the external characters of colour and covering. The following will, however, shew, that impressions from terror may sink so deep as to affect the organization also of the progeny. In the Linnaean Society of London is found an account, by Mr. MILNE, of a pregnant cat, his own property, the end of whose tail was trodden on with so much violence, as, apparently, to give the animal intense pain. When she kittened, five young ones appeared, perfect in every other respect except the tail, which was, in each one of them, distorted near the end, and enlarged into a cartilaginous knob.—*Lin. Trans.*, vol. ix, p. 323.

this sudden favourite still haunted the bitch, and for weeks after she pined excessively, and obstinately refused intercourse with any other dog. At length, however, she bred by a regular setter; but when she whelped, the Doctor was mortified with the sight of young which he perceived bore evident marks (particularly in colour) of the impression received by the cur, and they were accordingly destroyed. The same occurred in all her future puppings: invariably the breed was tainted by the recollection of her attachment to this ill-bred favourite.

The practical inferences that may be drawn from a knowledge of this curious anomaly in the animal economy, are, that in very select breeds too much care cannot be taken to render the choice of the male agreeable to the female; and also, that where a bitch of a very valuable breed has been long habituated to any favourite male companion it is not intended she should be allowed to breed by, that it is advisable to remove such favourite some time before the oestrus or heat of the bitch is likely to come on, which will prevent the disappointment that might otherwise occur.

Having received no such mental impressions, and the process of gestation or pregnancy meeting with no other interruption, the produce of a connection between dogs of a similar breed usually exhibits traits of individual resemblance to each, united with the characteristic marks common to the breed in general. When the parents are of different breeds*, the varying outlines of each are usually softened and blended in the progeny, in nearly equal proportions†. But this divi-

* When dogs of different breeds are brought together, the progeny are said to be a *cross*. Thus, pointers are sometimes *crossed* with foxhounds to increase the speed and ardour. The effect of these crosses is retained to the seventh or eighth generation: among turf sportsmen it is supposed to exist, in horses, to the twentieth successive descendant.

† These blendings of the individual character of each parent are illustrated by hybridous animals. How easily traced, and yet how blended into a whole, are the characters of the horse and ass, as observed in their hybrid the mule!

Hybrids also completely disprove the opinion some physiologists have

sion of parental character is not always equal : it sometimes happens that the more notable characteristics of form, size, and qualities, are principally derived from the male parent*. In others a stronger similitude to the mother is apparent, and it now and then happens that these partialities seem to be confined to a part of the progeny only, or is divided between the parents. This is sometimes observed when a breed is made between a pointer and setter, in which case it has not

formed, that the male parent, in the procreative act, imparts nothing beyond the mere stimulus of life to the ovum or germ of the female ; for it must be evident that the germ in the mare is naturally of the horse species ; and did such germ merely receive the vivifying principle by the sexual intercourse, it would be indifferent to the future produce whether the father were a horse or an ass.

* Some physiologists (and among them Sir E. HOME) have supposed that the ovum or germ, previous to impregnation, is of no sex, but is so formed as to be equally fitted to become a male or female fœtus, and that it is the process of impregnation that marks the sex, and produces both male and female generative organs. However this opinion may seem to be supported by facts, and although instances do occur that give reason to suppose that the male parent has considerable influence in determining the sex, yet an equal number of cases arise that prove the female to be equally concerned in this matter. It is true that some dogs, some stallions, and some bulls, are remarked for begetting a greater number of males than females ; while others are the parents of more females than males. In the *Phil. Trans.* 1787, p. 344, mention is made of a gentleman who was the youngest of forty sons, all produced in succession, from three different wives, by one father, in Ireland. But it is, at the same time, equally notorious, that some bitches, let them breed by what dog they will, yet still have a plurality of one sex. The same occurs, in a much greater degree, among other domestic animals. Mr. KNIGHT remarks on the equal aptitude in the female in determining the sex : “ In several species of domesticated animals (I believe in all), particular females are found to produce a majority of their offspring of the same sex ; “ and I have proved repeatedly, that, by dividing a herd of thirty cows into “ three equal parts, I could calculate with confidence upon a large majority “ of females from one part, of males from another, and upon nearly an equal “ number of males and females from the remainder. I frequently endeavoured to change the habits by changing the male, but without success.”—*Phil. Trans.* 1809, p. 397. In *King's Langley* church are the effigies of seven successive daughters born to a man by his first wife, and of seven sons born to him by a second wife, in succession.

unfrequently happened that a part of the litter has produced nearly thorough-bred pointers, while the remainder have proved well-bred setters

Among the various phenomena that the reproductive process present, *breeding back*, as it is termed among sportsmen, is not the least curious. It would appear from these cases, as though a family character was originally imprinted on the generative organs, or that the ova or germs of the future race were formed after one common hereditary mould; for it is often observed not only among dogs, but among other domestic animals, and even in man also, that their progeny bear a greater resemblance to the grand-dam or grandfather than to their immediate parents. It is evident that this is more likely to happen where a common character has been preserved during successive generations, or, in *turf language*, where the *blood* has been kept *pure*; which is nothing more than an established variety, being acted on in its successive generations by the owner, in the direction of the sexual intercourse, the selection of food, discipline of qualities, and regulation of habits.

It may, however, be necessary to remark, that, in a philosophical point of view, we have no such thing as a pure breed among any of our domestic animals. Our most boasted specimens are either altogether degenerates*, or produced

* A more close examination of the subject will shew not only that our most highly prized animals are *degenerates*, but that many of them are *monstrosities*. Degeneracy, among naturalists, is a departure from originality and a state of nature; thus, philosophically, wild animals only can be considered as perfect. But man, to gratify his artificial wants, has cultivated forms and properties in them which, however they may prove beneficial to himself, render the animals subjected to such alterations unfitted for the purposes they were originally destined for. What would become of some of our cultivated breeds of dogs, were they turned loose in a wild country? Could a pack of pugs hunt down the antelope? The high-bred greyhound's speed and vision united would fail in the same circumstances, deprived, as he would find himself by cultivation, of the means of following his prey through its various windings by scenting his course. The pointer might *stand*, and

from congenital varieties: the native and original pure breeds are mostly unknown to us. In the natural history of the dog, I have already had occasion to notice that these varieties or breeds in the canine race have been generated by various causes, as climate, peculiarity in food, restraint, and domestication. Man, active in promoting his own benefit, has watched these gradual alterations, and has improved and extended them by aiding the causes that tend to their production, and by future care has perpetuated and made them permanently his own.

Many of the varieties among dogs and other domestic animals are the effect of monstrosity, and have arisen from

his partners might *back* him, until they all became monuments of perishing excellence: their cultivated talent would infallibly starve them.

As promoters of the ease and comforts of mankind, every one yields the well-merited honours that are distributed among our enterprising cattle breeders; but the philosopher, retired from the world, and the naturalist, contemplating his subject freed from extraneous bearings, regard the boasted excellencies of our domestic animals in general as monstrosities. The majestic large breed of heavy cart horses, cultivated to their present stature by the luxuriant nature of the herbage in this and some other countries, would be ill calculated to save themselves from beasts of prey, by either flight or active resistance: their immense weight would sink them in loose soils, that their more agile originals would bound over with instinctive celerity; and the scanty herbage in nature's wilds would ill suffice their multiplied wants. With the ox and sheep a constitutional obesity is encouraged, until the fat and muscular parts are totally disproportioned to the bony mass that is to support them, which lessens, according to modern excellence, in an inverse proportion to its necessities; and, as though the degeneration was not sufficiently pursued, in the polled breeds those original marks of distinction and safety, the horns, also yield to the sacrifice.

Even the finest edibles amongst our garden bulbs, as the carrot, parsnip, &c. &c. are monstrosities, enlarged at the expense of the stem and other parts; and the disproportionate magnitude of our fruit is attributable to the monstrosity of the pericarp. It is not attempted to argue that these are not actual advantages to mankind, nor to detract from the merit that has introduced these acknowledged *improvements*; it is merely suggested to shew that a misconception and misappropriation of terms often arise according as the subject is viewed by the naturalist or the rural economist.

some anomaly in the reproductive or breeding process. When these accidental varieties have exhibited a peculiar organization or form which could be applied to any useful or novel purpose, the objects have been reared and afterwards bred from ; and when the singularity has been observed in more than one of the same birth, it has been easy to perpetuate it by breeding again from these congeners, and confining the future intercourse to them. To these accidental variations from general form and character among dogs we are to attribute our most diminutive breeds, our pugs, bull dogs, wry-legged terriers, and some others*. Our general breeds are, however, rather the effect of slow cultivation than of sudden and extraordinary production.

It has been before observed, that every variety or breed has a tendency to degenerate, or travel backwards to something like the original standard : this tendency is greatest in the accidental varieties or breeds just hinted at, in which a few

* Among other domesticated animals, prominent instances present themselves of accidental variety. The solidungular breed of swine, with their undivided feet, and the ancon or otter breed of sheep, described by **COLONEL HUMPHRIES**, in *Phil. Trans.* for 1813, part i, may be noticed in proof. These sheep were derived from the accidental deformity of one American lamb, born with legs most disproportionately short to the rest of his body, which deformity, added to great crookedness of the fore legs, rendered him unable either to run or to break fences. With these qualities it was determined to attempt a breed of this kind ; and, by confining the intercourse between him and his future offspring, it succeeded, and the ancon or otter breed is now established. The pure milk-white breeds which we witness now as permanent among ferrets, rabbits, mice, &c. originally sprang from one accidental variety of each. Man himself is not exempt from this departure from established form and character, as we witness in the Albino, who presents the same leucæthiopic constitutional characters in the deficiency of colouring matter, a similar redness of iris and pupil, and consequently the same intolerance of light, as the other white animals. There have been, and still exist, six-fingered families ; and **MR. LAWRENCE** informs us that the thick lip, yet visible in some noble Austrian families, was introduced by the marriage of the **EMPEROR MAXIMILIAN** with **MARY of BURGUNDY**. I have myself seen, in **Sussex**, a breed of tailless cats.

succeeding generations* is sufficient to destroy all appearances of variation from the original; but in breeds which have undergone great cultivation, it requires a much longer time wholly to degenerate them. The tendency is, however, inherent in all our domestic animals, and in none more than the dog; and it is to counteract this inherent property that forms a principal part of the art of successful *breeding*, as it is termed in the language of rural economy.

Notorious *varieties* or *breeds* are, therefore, the consequence of our attempts at the improvement of such races of dogs, or of any other domestic animals, as exhibit a constitutional tendency to a particular form or character, the properties of which are either known or expected to prove useful. Or they originate in the adoption of any accidental variety that may spring up in the way lately described. Or a breed may be established by any determinate form or quality, within certain limits, being previously fixed on; after this individuals are selected, perhaps not exactly similar, but each of which having distinct points of resemblance to the desired form, conjointly, the full end may be gained in their own union and that of their affinities. In this way the most surprising alterations in the animal character have been, and still may be, brought about; and forms almost ideal have been, and still may be, realized†. A breed or variety being

* LORD ORFORD bred between a bull dog and a greyhound: in seven descents all traces of the cross were lost in form; but he conjectured that he had gained an acquisition of courage and determination. Probably an accidental deformity might have disappeared sooner.

† Among the experienced fanciers of the small yellow and white spaniels, which much resemble those known by the name of the *Marlborough* breed, this is particularly exemplified. These elegant animals are very common among the *Spitalfields* weavers; and to such a perfection have they brought the art of breeding them, that it is affirmed they can insure, almost to a certainty, the requisite quantity of colour, the length of coat, its texture, and its disposition to curl or to remain straight.

The *Herefordshire* ox can be bred to a white or a half white face; and the horns of some breeds can be insured to an inch. The colour of the game cock is arbitrarily imposed by the handler and feeder; and the experienced pigeon-fancier can breed to a feather.

adopted and established, its permanency must depend on the care bestowed not only in selecting proper individuals to propagate from, but also in the adoption of such other circumstances as tend to preserve the animals themselves in that state the nearest approaching to what has been established as the standard. These circumstances include, choice of situation, proper food, due exercise, with judicious restraint and discipline. The aids we should lend to perpetuate a diminutive race would be, close confinement, artificial warmth*, and sparing food. Were our attempts directed to the external covering, artificial warmth would render it thin and fine; while, on the contrary, exposure would thicken and probably lengthen it. If great size exists, and we wish to continue or increase it, we should allow but one or two young to remain in a litter; we should not only feed the mother liberally, but it would be proper early to accustom the young to eat of animal food also: adding to all these the free access of air, ample room, and opportunity for full exercise.

But, above all, the permanency of a breed must depend on the judicious selection of individuals as parents, who, having the specified and definite form in the greatest degree, are enabled in their progeny to perpetuate the same. This care, when *long continued*, of confining to particular races or breeds the means of continuing their species, constitutes what is termed *purity of blood*. Immense importance is attached to this purity of blood, or lineal descent, amongst the breeders of almost every kind of domestic animal†. The scientific

* The French are said to give their diminutive breeds spirituous liquors when they are young, to stop their growth: if it has this effect, it is because artificial warmth produces premature developement of the frame, and thus promotes an early puberty.

† The care taken by the Arabs in preserving the breeds of their horses is most remarkable. None but stallions of the finest form and *purest blood* are allowed access to their mares, which is never done but in the presence of a professional witness or public officer, who attests the fact, records the names, and signs the pedigree of each. The

sportsman acknowledges it, in its fullest degree, in the genealogy of his dogs ; and experience teaches him that a certain degree of perfection, once gained, can only be continued by successive propagation from the blood or breed.

In our selection of *breeders*, a variety of circumstances should necessarily engage our attention ; as, whether we are continuing a breed already established, improving a defective one, or altogether forming a new variety. In either case, but particularly in the two latter, one or two propagations are not sufficient to enable us to judge of the merits or demerits of a breed. Anomalies may occur, monstrosities appear, or our dogs may breed *back*. It should likewise be always present to us, that, in despite of all our care, and in face of the most favourable opportunities for selection, still *perfect specimens* to breed from are unattainable ; and as, therefore, we are necessarily to expect defects, it should be our care to well examine that we do not select our male and female subjects with each the same faulty form or property ; for, however perfect they may be in other respects, they are, in such a case, totally unfit to breed from together. We may, for instance, suppose an otherwise eligible pair of pointers, of the purest blood, but that each, from early and constant confinement, had contracted long, weak, spreading phalanges or toes, instead of a round, cat-like, form of foot. By choosing a mate for each of these whose feet were particularly good, we might remedy this defect, and preserve the breed ; but it would be only propagating de-

Circassians distinguish the various races of their horses by marks on the buttocks. When a noble mark is put on an ignoble breed, the forgery is punished with death.—PALLAS's *Travels in the Southern Provinces of the Russian Empire*, chap. 14.

In Persia, almost equal ceremony takes place when a breed is undertaken between some of their most highly-prized dogs. In England, stallions have been sold for 1,000 guineas, bulls for 300, and rams for the same. The celebrated Yorkshire greyhound, called *Snowball*, lined bitches at three guineas each. Such estimation is purity of blood and regularity of descent held in.

formity to breed from them together. We can only expect to prove successful in rearing a superior race of any domestic animal, when we make our selection of parents with a careful reference to the merits and defects in each, by balancing the one against the other, and by thus combining their different properties. It is by inattention to these circumstances that so many persons, after giving immense prices for animals of particular breeds, have found themselves foiled in their attempts at rearing any thing beyond mediocrity, which animals, under the judicious management of a RUSSELL, a COKE, or an ELLMAN among cattle, or an ORFORD, a MEYNELL, a RIVERS, or a TOPHAM among dogs, would have produced unrivalled excellencies.

It is not no less to be understood, that it is not the form only that we can alter or bring into the line of descent; the aptitudes and qualities are also to be cultivated; they descend in succession equally with the external form. Temper, sagacity, and aptness under discipline, are all hereditary, and are all equally to be taken into the account by a breeder. Some breeds of pointers require little breaking, but the first time they come on game they exhibit the required properties with nearly the steadiness of an old dog. A common fault is often committed by theoretical and inexperienced breeders, which consists in cultivating a particular quality, or propagating a particular point of form; but, at the same time, losing sight of the general existing integrity, or future improvement of *the whole*. In this way, fox-hounds may be bred to run nearly as fast as greyhounds, at the expense of their scent, hardihood, and sagacity. For it cannot be too strongly inculcated on the mind of every breeder, as an established law in the animal economy, that an extraordinary degree of excellence on any one particular, either natural or acquired, is almost invariably accompanied with a privation of the usual quantity of it in some other. This law is fully exemplified in those animals where breeding is carried to its greatest refinement; or, in other words, where cultivation in qualities or form, or both, weakens or destroys the in-

stinctive habits to such a degree as to make the subjects of such cultivation bad breeders, and still worse rearers, of progeny. If I mistake not, a tendency to this may be observed in all our very high bred animals. Among the feathered race it is peculiarly remarkable. The higher any animal is bred, the more artificially he becomes placed with regard to external circumstances, till at length he requires constant care to obviate those contingencies that would be unheeded by others.

Among the practical and systematic breeders of all domestic animals, and among none more than those sportsmen who devote themselves to the improvement of the dog, a great diversity of opinion has always existed on the subject of *consanguineous breeding*, or of that between near relations, characterised by the term *In and In*. The conflicting authorities on the subject are numerous, and the testimonies contradictory; and it is more than probable that they will remain so, until a long course of experiment is undertaken by a body or society of scientific and observant breeders, on various domestic animals, for the express purpose of arriving at the truth in this particular. A few solitary or isolated facts can do little to set the subject at rest: theory can only assist by philosophically directing the inquiry aright. Truth should be the ultimate object of every pursuit, and, from whatever source it is obtained, it should be embraced. I profess to have had little experience myself as a practical breeder, but I have endeavoured to profit by the experience of others. I am by no means wedded to the *in and in* system of breeding; and when I hear grave authorities stating facts (the only sure guides to truth) against it, I am disposed to waver; but renewed examination produces counter statements, and I retrace my steps and become, as formerly, a defender (but, I own, not so zealous one) of *consanguineous breeding*. I will, however, endeavour to state the pro's and con's fairly, and then leave the matter, where it should be left, with the experimentalist.

The first argument that presents itself on this subject is,

that the early human and brute races must of necessity have been produced from the nearest affinities, and it is unreasonable to suppose that nature would have set out on a principle tending to the immediate deterioration of her works. This has been called the mere argument of necessity, and is said to apply only to the precise period when there was no other connexion possible. I admit that this is an argument of necessity, viewed with reference only to primitive times; but it stands otherwise, when we reflect that, for ages after, consanguineous marriages were consummated among nations of refinement, and, to this day, some savage tribes, particularly their reigning families and chiefs, confine themselves to marriage among lineal kindred*, and that in neither instance has any degeneration been observed. From a parity of reasoning, as we know that an insuperable bar has been placed against propagation among the several genera, by an instinctive aversion, that the specific forms might not be lost in hybridous productions; so it does not appear to be straining analogy too much to suppose that, had ill effects followed from consanguineous intercourse, something like this instinctive aversion would be manifested here also †. Nei-

* The Egyptians are said to have allowed of the marriages of brothers to sisters. The Athenians admitted the betrothing of brothers and sisters of the half blood, if related by the father's side. The marriage of ABRAHAM with his sister assures us that it was practised among the Chaldeans; and it may be remarked, that, when this island was conquered by Cæsar, a peculiar system of cohabitation prevailed.—*Uxores habent deni duodenique inter se communes, et maxime fratres cum fratribus, parentesque cum liberis; sed si qui sunt ex his nati, eorum habentur liberi, quo primum virgo quæque deducta est.*—PALEY's *Nat. Phil.*

† It may be argued, that such aversion is manifested in the political restrictions relative to consanguineous marriages among enlightened nations. That such prohibitions were necessary from moral and political necessity is evident; for, by extending the social compact to marriages without the family pale, knowledge and the arts were extended, improved, and became a common property; wealth was diffused, communities were enlarged, and social interests joined those who before were in opposition to each other; and, above all, the demoralizing and depopu-

ther does it appear, *à priori*, easy to substantiate any physical or physiological reason why breeding among lineal kindred should of necessity prove deteriorating to the future progeny. The same organization, the same constitutional sympathies, the same aptitudes, when not defective, would tend, under union, to produce a perfect similitude. But facts are infinitely more to our purpose than the most specious arguments.

We are assured, that the Arab horses of high blood are bred in and in; and we know that no people in existence pay more attention to the improvement of their horses than they do; and as these horses have maintained their high character for ages, it forms a strong presumption in favour of this system. Mr. BAKEWELL, whose name will ever rank high as a breeder of cattle, reared his valuable stock wholly from consanguinity: in fact, his important improvements were all founded on this intercourse among lineal kindred, or their affinities. Mr. MEYNELL, who was no less celebrated as a sportsman than as a close observer of many subjects connected with the rural economy of the animals around him, bred all his fox-hounds in this manner; and those adventurous gentlemen who have followed them, can bear testimony to their excellence. It might not, perhaps, be an erroneous conclusion to draw, that the prejudices against breeding from near relationship in animals, are less the effect of reason or experiment than of a received prejudice of very long standing, founded originally on philosophical arguments, connected, not with brutes, but with the political and moral economy of the human subject.

lating effects of an early departure from chastity, which unreserved family communication led to, was prevented. It is, however, clear, from history and from philosophical investigation, that such aversion is neither instinctive nor necessary, but an acquired regulation of passion, implanted by education, and made general by refinement.

Sir W. C—n observes that, according to VARRO, this aversion has really occurred even in animals,—*Equus matrem ut saliret adduci non posset*, *De Re Rustica*, lib. iii, c. 5; but the ingenious Baronet candidly acknowledges that subsequent experience has not justified the assertion.

I have already stated, that numerous and powerful opponents exist to the system of in and in breeding, whose opinions ought to have their due influence when considering the question *. Sir JOHN SEBRIGHT, who has been long known as a practical breeder and man of science, is understood to have been always inimical to consanguineous breeding. His opinions on the subject have, of late years, been before the public, in a Letter on *The Art of Improving the Breeds of Domestic Animals*; and as great importance is justly attributed to them, I shall, in candour, quote so much as is necessary to shew the drift of his arguments.—He says, “ if “ a breed cannot be improved, or even continued in the de-“ gree of perfection at which it has already arrived, but by “ breeding from individuals, so selected as to correct each “ others defects, and by a judicious combination of their dif-“ ferent properties (a position that I believe will not be de-“ nied), it follows that animals must degenerate by being “ long bred from the same family, without the intermixture of “ any other blood, or from being what is technically called “ *bred in-and-in*. ”

Against Mr. BAKEWELL’s authority the ingenious Baronet thus reasons:—“ No one can deny the ability of Mr. BAKE-“ WELL in the art of which he may fairly be said to have “ been the inventor; but the mystery with which he is well “ known to have carried on every part of his business, and “ the various means which he employed to mislead the public, “ induce me not to give that weight to his assertions, which I “ should do to his real opinion, could it have been ascer-“ tained.”

To Mr. MEYNELL’s opinion on the subject, he replies—“ Mr. MEYNELL’s fox-hounds are quoted as an instance of the

* The principal arguments, in my own mind, against this mode of increase is, that hereditary diseases, which in some breeds are considerable, are by this means perpetuated and probably increased; and, also, that when breeding by relationship is a settled practice, the accidental defects are too apt to be passed over unobserved.

“ success of this practice (i. e. *the in-and-in*) ; but, on speaking to that gentleman upon the subject, I found that he did not attach the meaning that I do to the term in-and-in. He said, that he frequently bred from the father and the daughter, and the mother and the son. This is not what I consider as breeding in-and-in ; for the daughter is only half of the same blood as the father, and will probably partake, in a great degree, of the properties of the mother.”

This gentleman, also, in another part of his letter, states some important facts on the matter in these words :—“ I have tried many experiments by breeding in-and-in upon dogs, fowls, and pigeons : the dogs became, from strong spaniels, weak and diminutive lap-dogs ; the fowls became long in the legs, small in the body, and bad breeders.”

The author of *A Treatise on Greyhounds* is also, in some degree, unfavourable to breeding a-kin. He says, “ If continued for some litters, a manifest inferiority of size, and a deficiency of bone, will soon be visible, as well as a want of courage and bottom ; though the beauty of the form, with the exception of the size, may not be diminished.”

BUFFON argues on the same side :—“ Ce qu'il y a de singulier, c'est qu'il semble que le modèle du beau et du bon soit dispersé par toute la terre, et que dans chaque climat il n'en reside qu'une portion qui degénère toujours, à moins qu'on ne la réunisse avec une autre portion prise au loin ; en sorte que pour avoir de bon grain, de belles fleurs, &c. &c. il faut en échanger les grains et de ne jamais semer dans le même terrain qui les a produits ; et de même, pour avoir de beaux chevaux, de bons chiens, &c. &c. il faut donner aux femelles du pays des mâles étrangers, et réciproquement aux mâles du pays des femelles étrangères : sans cela les grains, les fleurs, les animaux dégénèrent, ou plutot prennent une si fort teinture du climat, que la matière domine sur la forme, et semble l'abâtardir, l'empreinte reste, mais défigurée par tous les traits, qui ne lui sont pas essentiels. En mêlant au contraire les races, et surtout en les renouvelant toujours par les races étrangères, la forme semble se

“perfectionner, et la nature se relever et donner tout ce “qu’elle produit de meilleur.”—BUFFON *Hist. Nat.*, tom. iv, p. 216.

Mr. BECKFORD, in his *Thoughts on Hunting*, has this remark:—“A very famous sportsman has told me, that he frequently breeds from brothers and sisters. As I should be very unwilling to urge any thing in opposition to such authority, you had better try it; and if it succeeds in hounds, it is more, I believe, than it usually does in other animals.”

It remains to add, that many practical breeders of inferior note are averse to breeding in succession from near relationship by blood, as brother and sister, father and daughter, &c. &c.; but many allow even the benefit of relationship in a more remote degree. This is particularly the case with some rearers of game fowls, who are favourable to breeding from the third remove, which they call a *nick*. From all which discrepancy of opinion may be gained, that the subject yet remains problematical; and, also, that the opposition to it, if not altogether unfounded, has not yet, in the vast length of time the system has been under trial, received such an accumulation of striking and incontrovertible facts as to force conviction.

In kennels, where many dogs are reared, it is usual to endeavour to breed in the early months, which is a judicious practice, as it enables the young to benefit by the genial warmth of the summer, and to expand their limbs by exercise in the open air more freely. During the pregnancy of bitches particular care should be taken to observe, and to remove, any appearance of mange or other affections of the skin and surface: if this be neglected, the progeny will be brought into the world with an hereditary taint that no future endeavours can wholly eradicate.

Rearing of Puppies.—The number of young that dogs bring forth varies from one to fifteen: instances have occurred where sixteen have been whelped, and I once removed the same number from a dead setter. Four, five, six, or seven, are common numbers. How many it is proper to rear, must

depend on circumstances. A very strong healthy mother, with full feeding, may bring up five ; but when the breed is valuable, and great size and strength are required, four, or even three, are more proper.—See PUPPING. If a foster mother is procured for the supernumerary pups, she should, if possible, be one of the same breed with themselves. From the experience I have had in this particular, I am strongly inclined to believe, that the qualities of the foster parent are, in some degree, transferred with the milk ; and when the breeds are distinct, this must be very prejudicial. I am also borne out in this opinion by the testimony of other observant sportsmen* Constitutional diseases may be likewise *gained* by this means †. There is, at times, some difficulty experienced in getting a foster parent to receive strange young. In this case it is usual to sprinkle them with the milk of the bitch they are to be put to. This usually succeeds, upon the same principle that shepherds, when a ewe dies, take her lamb, and, having found a ewe who has lost one, the dead lamb's skin is stripped off by them, and sewed around the living lamb, who is then received by the foster parent as her own. Most animal instincts, connected with the reproductive system, are conducted by means of smelling.

Puppies are born blind, and remain so for many days ; their ears are also impervious. Eye-sight and hearing would have been useless to animals born so indigent, and which, in a state of nature, were intended to remain buried the first

* The learned author of *A Treatise on Greyhounds* introduces some quotations to shew that this effect had not escaped the attention of the antients. COLUMELLA, lib. vii, c. 12, has the following remarks on it :—
“ Nec nunquam eos quorum generosam volumus indolem conservare,
“ patiemur alienæ nutricis uberibus educari, quoniam semper lac et spi-
“ ritus maternus longe inagis ingenii atque incrementa corporis augent.”
Similar observations occur in XENOPHON. *de Venat.* 987 ; OPPIAN. *Venat.* i, 442 ; *Cynosophium*, &c.

† I am acquainted with a very fine child with diseased eyelids, who is the only one thus affected out of several children ; she was likewise the only child put out to nurse. The woman who suckled her has a large family, and most of her children have the same affection.

weeks of their existence in holes and dark caverns. These organs only develope themselves when their owners begin to be sensible of their wants. At this early age, the whole skin presents a beautiful pink tinge, but which gradually disappears, and gives place to a clear white in most parts of the body; while the retemucosum of such parts as are intended to exhibit a dark hue, as the roof of the mouth, paws, nose, &c., at the same time assumes its intended colour. The upper milk or temporary teeth, both cutting and grinding, appear first, and are tolerably complete at a month old; the others appear later, by which arrangement the teats of the mother do not suffer: the milk teeth give place to the permanent set at six or seven months. The testes do not descend into the scrotum till the third, fourth, or fifth week, but they may be felt a week previously within the abdomen, on each side of the penis. Dogs are often born with supernumerary claws, among sportsmen called dew claws: some of these have a corresponding metacarpal or metatarsal bone, others are appendant only to the integuments. In either case they should be taken off early.—See CLAWS and CROPPING.

When many young of a litter are preserved, they should be early accustomed to lap: milk which has been boiled and slightly sweetened is proper; when given raw it is apt to purge, and sweetening it makes it more nearly resemble the mother's milk. Meat, also, cut fine may be early given, as it will materially save the mother, and benefit the progeny also. Clean litter, free access of air, and room for exercise, are essentials to their well doing. Young dogs should be early accustomed to restraint, with a chain and collar; otherwise, when they are accidentally tied up, it is apt to occasion great alarm: I have seen fits follow this. Confinement, however, under any circumstance, should be only occasional, and never long continued: thousands are rendered weak, ricketty, and have their feet spread out into thin narrow phalanges, by close and early confinement.

Young dogs are liable to several diseases that are peculiar

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to this stage of their existence. One of the most fatal of these seems almost peculiar to some breeds, particularly to terriers, pugs, the smaller kinds of spaniels, and, indeed, to most of the diminutive races ; and more especially to such as live luxurious and artificial lives. Among these, certain individuals always bring forth their young, either already diseased, or with such a tendency to it, that the complaint alluded to soon makes its appearance, and with greater certainty when they have to combat with bad air or confined situation. This disease closely resembles *tabes mesentericus*, to which the human infant and monkies also are liable. It seems also to originate from the similar causes of constitutional predisposition, gained from the mother before birth, or from the want of nutrition in her milk from bad living afterwards. It appears also under the similar features of a large belly with stinted growth, an unthrifty state of the hair, and a countenance of peculiar sharpness and sagacity. The complaint commonly ends fatally by the animal's becoming tabid: neither is medical treatment of any service, unless very early resorted to ; in which case, liberal feeding, free air, with mild purgatives and alteratives, will sometimes arrest its progress. When there is reason to suspect an unhealthy state of milk in the mother, a change should be made from it, by means, either of a foster parent, or by mares or cows' milk given by hand.

Now and then the affection originates in worms ; in which cases, the hair stares more than usually, and, in addition, the animal rubs his hind parts on the ground, and his stools appear irregular in consistence and colour. These cases of *tabes* are more manageable than the others, and, if treated as directed under the head WORMS, may be generally relieved. Worms are very common in young dogs, perhaps few are without them ; whenever, therefore, puppies have fits, irregular bowels, violent and unnatural appetite, and a general unhealthy appearance, worms may be suspected as the cause.

Rickets destroy many puppies also, particularly among the

breeds that are closely confined, as in cities and large manufacturing towns. This disease shews itself by a large head united to a peculiar mixture of care and intelligence in the countenance ; the joints are distorted—those of the elbows turn outwards, and the whole appearance is unthrifty. Among terriers, the deformity has been cultivated into a breed, called the *wry-legged*, which is much used in vermin-hunting. Rickets may be remedied by pure air, free exercise, cleanliness, and nutritious food.

Young dogs are also liable to a peculiar spasmodyc affection of the bowels. I have seen it epidemic. A most painful cramp seizes on the bowels; the animal cries violently during the attack, which lasts a longer or shorter period, and then remits until it again seizes him. It is not very manageable, but often proves fatal ; it, however, sometimes gives way to active mercurial purging.

Bronchocele.

BRONCHOCELE is a steatomatus swelling of the glands of the throat, apparently of the thyroid, and is a very common complaint among dogs. Pugs, barbets, and French pointers, are peculiarly liable to it. In the human species, this disease is most common to the inhabitants of mountainous countries. But, in dogs, it does not appear endemic, and is more confined to some particular breeds. Other dogs, as terriers, spaniels, &c., sometimes, however, have it ; but it is not frequent in these, and in the larger tribes it is very seldom seen. The swelling comes on generally while very young, and continues to enlarge to a certain size ; after which it usually remains stationary, seldom increasing to such a degree as to prove fatal. It is, however, troublesome, and in some measure hurtful, from the pressure it occasions on the surrounding parts.

The treatment is not difficult, nor usually unsuccessful,

when early adopted. One of the following balls should be given every day; in bad cases, twice a day:—

Burnt sponge 1 dram
Nitrated potash (*nitre*) half a dram.

Make into six, nine, or twelve balls, according to size, &c.

Mild mercurial ointment half an ounce
Blistering ointment half an ounce.

Mix, and rub the swellings once a day with a portion equal to a hazel nut, or a walnut, according to the size of the dog; first clipping away the hair, and, after the application, wrapping up the neck with a bandage, to prevent the ointment from being rubbed off. During the use of this application, the mouth should be examined now and then, to guard against the sudden attack of salivation. Should this treatment fail to remove the tumour, recourse may be had to the new remedy *Iodine*, which has proved very successful in the human goître. Internally given, it has occasioned the most serious symptoms, and, externally applied, it requires to be attentively watched; consequently it ought to be resorted to only under judicious medical superintendance.

Cancer.

DOGS are subject to tumours, principally of the glandular parts, which exhibit the true schirrous character, being first observed hard and circumscribed; but, in their gradual increase, the skin becomes shining, distended, and discoloured, when ulceration soon follows: and, although the subsequent progress is seldom marked with the virulence of the human carcinomatous ulcerations, yet the resemblance is too striking not to warrant the same common term of *cancer* to both these morbid affections. The canine cancer not only proceeds more slowly, but it likewise seldom deranges the general health, is seldom if ever translated to the lungs, and does not appear to occasion those lancinating pains felt by

the human victim. Now and then, however, a more virulent character marks its progress. I have seen the ulcerous affection, called *canker in the ear*, when of long standing, take on the true carcinomatous character, and extend rapidly over the muscles of the face, till, having destroyed one eye, and commenced its attack on the throat and tongue, the animal was destroyed. I have also seen cancer in its most malignant form in cats; first attacking the mammae or teats, and then spreading over the abdominal muscles and surrounding parts. Any part may become the seat of scirrus, and consequently of cancer. Dogs occasionally have their testicles affected by scirrus, rarely by cancer, but it is much more common in the mammae, the uterus, and the *vaginæ*, of bitches.

Cancers of the vaginæ and uterus are by no means uncommon, and are sometimes occasioned by the foolish practice of exciting premature oestrus by stimulating injections, but more frequently by a brutality often exercised towards dogs, of dashing them with cold water, or of forcibly separating them during copulation. Cancer sometimes attacks the *labiæ*, at others the inner surface of the *vulvæ*, and sometimes extends to the uterus; but, in either case, it presents a fungous excrescence either of a deep red or a more livid colour, with ulcerated uneven edges. A bloody ichor constantly distils from the surface. In the very few cases where I have seen animals suffered to live to the extent of the complaint, the fatal termination has been slow but certain: gradually, the morbid secretion of the part united with the irritation; but, principally, the former has worn down the animal.

When cancerous ulcerations have taken place in these or in other parts, I have seldom succeeded in restoring a healthy action, or of promoting a cure, otherwise than by excision. Now and then, however, I have experienced benefit from the use of the bruised leaves of the hemlock, as a poultice, daily; with balls composed of one, two, or three grains of extract of hemlock (according to the size and strength of the

dog), and ten, fifteen, or twenty grains of burnt sponge, in each ; repeated once or twice a day, as the health would bear them. Extirpation is however the most eligible remedy, and may be, in most cases, practised with safety by an experienced surgeon or veterinarian. When cancer is purely glandular, from its circumscribed form, no difficulty will be found in detaching the whole morbid substance ; but when it has attacked the muscular, cellular, or superficial parts, as the face, parieties of the abdomen, scrotum, vulvæ, or uterus, then the utmost caution is requisite to remove every diseased portion. It must also be taken into the account, that although, in the canine cancer, ulceration does not often reappear in the immediate part, when the operation has been judiciously performed, yet, when the constitution has long been affected with this ulcerative action, it is very apt to appear in some neighbouring part soon after. This subject will be continued, and dilated on, when treating of SCIRRHOU^S TUMOURS.

Canker in the Ear.

FROM confinement and luxurious living, dogs become subjected to various complaints, that evidently arise from the formation of too great a quantity of blood, and other juices ; which, not being spent in the support of the body, find themselves other outlets. Canker in the ear is evidently produced by this disposition in the constitution to throw off the superfluity accumulated within. In these cases, the dog is first observed to scratch his ear frequently ; on looking within which, a red granular or scabby appearance is seen, from extravasated blood become dry. If the complaint is not stopped in this state, it proceeds to ulceration, when the internal part of the ear, instead of being filled with dry blood as before, will be found always moist with matter. The dog now continually shakes his head from the intolerable itching ; and, if the root of the ear is pressed, the matter within

crackles, and tenderness is expressed. When canker has remained long, the internal ear becomes closed, and the hearing lost: now and then the ulceration penetrates inwards, and destroys the dog. I have also known instances where the ulceration has assumed a cancerous appearance, and extended itself over the face.

This complaint appears to have also another source besides over-feeding, heat, and confinement; which is, the action of water within the ears. It is remarkable that all dogs, who frequent the water much, are more particularly disposed to canker than others. Any kind of dog may contract it thus, particularly when aided by artificial habits; but *Newfoundland* dogs, poodles, and water spaniels, are liable to it when not so artificially treated. Perhaps the length of hair around their ears, not only keeps these parts hot, but also retains the water within, and thus encourages an afflux of fluids or humours, as they are termed, to them. That the water has this tendency is certain, for I have frequently seen it removed, by merely keeping such dogs from the water; that is, in those cases where the feeding and exercise were proportionate, and the fatness has not been inordinate.

The cure, it is rational to conclude, must be either simple, or more complicated, according to the cause producing the disease. Whenever there is much fatness and fulness of habit, or when the dog has been subjected to much confinement in a hot close situation, these circumstances must be immediately rectified. Abstinence and purgatives will reduce the fat; a cooler situation must be chosen, open and unrestrained; full exercise must be allowed to assist also in giving another direction to the fluids. In those cases where there are symptoms of a constitutional foulness, which shew themselves by a red itching skin, stinking coat, and mangy eruptions; in such, in addition to exercise, a vegetable diet, cleansing alternatives, and occasional purges, should be given. *See ALTERNATIVES.*—In very bad cases, a seton may be properly introduced in the neck, and suffered to remain there, until the

benefit derived from it is very apparent. When the cankered dog is very fat, occasional bleeding is also beneficial.

External applications are likewise essential to the cure, and in some mild cases are all that are necessary, particularly where it may be supposed that swimming much, or too frequent washing, may have principally tended to produce the complaint. In the early stages a wash, composed of half a dram of acetate (*sugar*) of lead, dissolved in four ounces of rose or rain water, is often all that is necessary. A small tea-spoonful may be introduced (previously warmed to a blood heat, to prevent surprise) night and morning, rubbing the root of the ear at the same time, to promote the entrance of the wash into the cavities. In more obstinate cases, it is prudent to add fifteen or twenty grains of vitriolated zinc (*white vitriol*) to the wash; and if, instead of water, a decoction of oak bark is made use of to form the wash, it will greatly promote the end desired. In some cases, acetate of copper (*verdigris*), mixed with oil, has proved beneficial when introduced in the same manner. In others, submuriate of quicksilver (*calomel*) and oil have produced amendment in the same way. A *very* weak injection of the oxymuriate of quicksilver (*corrosive sublimate*) has succeeded when every other application has failed.

Canker on the Outside of the Ear.

ALTHOUGH this complaint bears the same name with the former, in appearance it is very different. It consists of an ill-disposed ulcer, which is usually situated on the lower edge of the flap or pendulous part of one or both ears, dividing it into a kind of slit. It seems to itch intolerably, and is therefore kept in a continual state of aggravation by the shaking of the dog's head. It is not a little remarkable, that whereas long-haired dogs (as *Newfoundlands*, setters, and water-spaniels) are more subject to *internal canker* of the

ear; so smooth-coated dogs (as pointers and hounds) are the only ones, in general, affected with this *outer canker*. Pointers and hounds who have been *rounded*, by having the flap shortened, are less liable to it than those who have their ears of the natural length. From this circumstance it is common to *round* them after the disease has appeared; but it frequently fails to cure, unless the part taken off extends considerably beyond the surface of the ulcerated slit. It is common also to burn out the ulcer either with the actual cautery, or with some caustic substance; but this also proves an uncertain remedy.

In full habits, and where over-feeding and confinement may be supposed to have had any share in the production of the disease, the same rules must be attended to, with regard to the constitution generally, as are detailed for the internal canker. But in other cases an external application is usually found sufficient. An unguent, made with equal parts of ointment of nitrated quicksilver and calamine cerate, may be applied once a day, carefully securing the ear from the injury occasioned by the shaking of the head, by a sort of head dress, during its use. Or the following may be tried:—

Oxymuriate of quicksilver (<i>corrosive sublimate</i>) very finely powdered.....	3 grains
Cerate of calamine (<i>Turner's cerate</i>)	1 dram
Sublimated or milk of sulphur	1 scruple.

In some cases, the oxymuriate of quicksilver has proved more efficacious in a wash, six grains being dissolved in four ounces of water. Strong astringent washes are sometimes useful, as alum, dissolved in a decoction of oak bark. When the disease proves very obstinate, excision must be resorted to, taking care that the whole, not only of the immediate cracked part, but also of its tumefied edges, are included in the operation.

Tumefied Flap of the Ear.

FROM a similar repletion of habit, and from the same attempts in the constitution to find an outlet to the superfluous humours, or fluids ; the flap, or pendulous part of the ear, becomes not unfrequently the subject of another complaint, which shews itself by a tumour, whose prominent part is always on the inner side. It sometimes swells to an enormous size, and occupies the whole of the inner surface of the flap, which then presents a shining tumid mass so painfully tender and weighty as to prove very distressing to the animal. It is most frequently met with in those dogs whose external ears are long, as setters, pointers, hounds, poodles, and spaniels.

Attempts at dispersing these tumours always fail, for the collections are, from the first, less phlegmonous than serous ; the only mode of relief is therefore to evacuate the contents : but it is too common merely to make a small opening for this purpose, which is almost certain to heal immediately, and a fresh accumulation takes place of the same bloody serum. The tumour ought either to be opened its full length, and a pledget of lint introduced to prevent too hasty a union of the outer edges of the sac ; or a seton should be introduced the whole length of the swelling, which should be suffered to remain for a week or ten days. By this means, instead of a discharge of serum, healthy matter will form in a little time, the sides will granulate and unite, and, on the removal of the seton, the external lips of the wound will close firmly and healthily. It is, however, a necessary caution to observe, that it is not prudent to open the tumour until it exhibits its characteristic shining appearance with evident fluctuation. The future recurrence of the complaint must be prevented, by attending to the constitution as before directed. It is also proper to remark, that all the affections of the flap of the ear are greatly aggravated by the force with which they are wrapped against the head by shaking it ; the pendulous

part should, therefore, always be secured in a kind of cap during the medical treatment.

Castration.

IT now and then becomes necessary to perform this operation, from disease of the spermatic chord, or from scirrhous swellings in the testicles themselves. Whenever such a necessity occurs, although castration is not a dangerous operation on the brute subject, yet it requires the assistance of a veterinary, or a human surgeon. Each testicle should be taken out of the scrotum separately, by an opening sufficiently large, when a ligature should be applied, moderately tight only, around the spermatic chord, about an inch and an half beyond its insertion into the testicle; the separation should then be effected by the scalpel or knife between the ligature and testis. It is sometimes performed without the ligature, by making the division of the chord with a red-hot knife, but the other is the neatest and safest mode.

In performing this operation on cats, nothing more is requisite than to make a slight opening on each side the scrotum, to slip out the two testicles, and draw them away with the fingers. The rupture alone of the spermatic chord prevents haemorrhage in them, and no future inconvenience is felt. It is often found difficult to secure a cat for this operation; but it may be easily managed in two ways. One is, by putting the head and fore-quarters of the animal into a boot; the other is effected by rolling her whole body lengthways in several yards of towelling.

Cataract.

See **BLINDNESS.**

Claws.

PUPPIES are frequently born with *dew claws*; sometimes they are double. The dew claws are those small additimentary ones situated on the inner side, one to each foot, distinct from, and much above, the claws of the toes. They are frequently unattached to any corresponding metacarpal or metatarsal bone, having only a ligamentary union; but whether there is any bony attachment or not, it is always prudent to cut them off in a few days after birth, otherwise they become very troublesome as the dog grows up; for the nail attached to the end of it frequently turns in and wounds the flesh; or, by its hook-like shape, it catches into every thing the dog treads on.

The horny claws are also subject, when dogs have not sufficient exercise, to become preternaturally long, and, by turning in, to wound the toe, and lame the dog. The claws, when become too long, are often cut off with scissars; but unless the scissars used are very short and strong, they are apt to split the claws. It is better, therefore, to saw them off with a very fine and hard cockspur saw, and then to file them smooth.

The toes are also subject to a peculiar disease, in which one of them will appear very highly inflamed, swollen, and somewhat ulcerated, around the claw. In such a case the dog employs himself in continually licking it, and which, instead of doing good, as is supposed, always makes it worse. This complaint is commonly mistaken for some accidental injury, and the owner is surprised to find, that neither the dog's licking, nor his own attempts to make the toe sound, succeed. The fact is, that this is simply a mangy affection, and may be readily cured by applying the sixth ointment directed for the cure of mange. If it should, however, prove very obstinate, the first ointment directed for *Canker on the Outside of the Ear* may be then tried with confidence. In either case, the foot must be sewed up in leather, to prevent the dog getting at it; taking particular care not to bind it up too tight: but

the securing of the diseased part from being licked is essentially necessary to the cure.

Clysters.

CLYSTERS are of the utmost importance in many cases of sickness in dogs. They become a most powerful stimulant to the bowels in obstinate obstructions, and in many instances of this kind they alone can be depended upon for the purpose: for, when the obstruction arises from an accumulation of hardened excrement, situated far back in the coecum or rectum, purging physic by the mouth loses all its efficacy, and, in fact, increases the evil. In inflammations of the bowels, bladder, kidneys, or womb, clysters have the additional advantage of acting as a fomentation. Cases wherein they may be beneficially used as nutriment likewise, occur very frequently: as when there exists so obstinate a sickness, that nothing will remain on the stomach; or when food cannot be passed by the mouth, as in locked jaw, in fractures, or in wounds of the mouth, face, or throat. In all such cases, clysters of broth, gravy, or gruel, will afford a very considerable quantity of nourishment: a small proportion of opium, as twenty drops of laudanum, may be given in each, to assist in retaining it within the bowels. Astringent clysters, as starch, rice water, alumine whey, infusion of red roses, or of oak bark, are useful in violent loosenesses. Purging clysters may be made of veal or mutton broth, with a portion of salt or moist sugar in them: the effect may be quickened by adding castor oil or Epsom salts.

Clysters are very easily administered to dogs, and no apparatus is so convenient for the purpose as the common pipe and bladder. The liquid should be warm, but not hot; the quantity from three ounces, to six or eight, according to the size of the dog, &c.: the pipe should be greased previously to its introduction, and the tail held down a minute or two after its removal.

Colic.

COLICKY pains may be the effect of *Inflammation*, or of *Constipation*, or they may be occasioned by a *Bilious colic*. All these are treated of under **INFLAMED BOWELS**. The most violent pains may be occasioned within the bowels by *Poisons*, which see.

Spasmodic colic will be further noticed under **RHEUMATISM**, which is by much the most fertile source of colic in dogs. But besides this, there is a *spasmodic constriction* of the bowels that not unfrequently occurs, most distressing in its symptoms, obstinate in its character, and very often fatal in its termination. I formerly attributed all these cases to worms, and I am still inclined to think that these animals, particularly the tape worm, will now and then occasion similar symptoms; but the generality of cases may be considered as arising from a disease *sui generis*. A person, not very conversant with the diseases of dogs, might also conclude that the head, in these cases, was the sole seat of the complaint; but innumerable instances have convinced me, that the bowels are primarily and principally the seat of the disease, which is of a peculiar spasmodic nature, and is commonly attended with a slight degree of inflammation.

The symptoms are dulness, loss of appetite; the nose is hot, but the forehead particularly so; with some panting, and much restlessness. In some cases, there are appearances of acute occasional pain; in others, there appears but little; but in all there is a particular stupor, and a very remarkable inclination to run round in a circle, and that always in the same direction. The sight seems affected, and sometimes the senses are wholly lost; at others, although the stupor is considerable, yet the faculties are not totally obscured. In some cases paralysis comes on, and the head becomes drawn to one side; and I have always observed it to incline to the same side that, while capable of moving, the dog turned upon. The limbs also participate in these extreme cases, and become contracted likewise.

The duration of the complaint is various. It sometimes destroys in a few days, while some cases linger two or even three weeks; but eventually five out of every six attacked with it, die. On dissection, only slight marks of inflammation usually appear, and now and then intussusception is met with; but in all, constricted and lessened parts of the bowels are met with, while other portions again seem larger than natural, and are flabby and unnaturally relaxed, as though they had lost all their tone by the disease. The most attentive dissection of the head, in these cases, has never detected any morbid appearances there, except, in one or two instances, a slight increase of vascularity. The affection of it, therefore, during the progress of the complaint, must be considered as purely symptomatic, and as not at all referrible to any specific affection of the sensorium itself; and, although the head feels hot during the disease, the eyes are flushed, and great pain appears in it, from the pressure that is always made by the animal against the hand, when it is held to it; and the sense of pleasure that is manifested when the forehead is rubbed; yet direct medical applications to the head, as fomentations, blisters, and leeches, have always failed to give any relief; while the remedies that have succeeded have been such as were applied immediately to the bowels.

The *treatment* I have found most successful consisted in early and active evacuations, combined with repeated warm bathing, and camphorated embrocations to the bowels. Strong anodyne clysters should be frequently administered; while large doses of æther, laudanum, and camphor, as prescribed under SPASM, are the proper internal remedies. In one instance strong shocks of electricity did good, and, in another, repeated affusions of cold water relieved; but in some others this latter method seemed to aggravate the symptoms. A complaint somewhat similar occurs in puppies also, but is then not attended with stupor, or the disposition to turn round. In a very few cases I thought I could trace the affection to the action of lead, but, in others, there were no reasonable grounds for referring it to any such origin.

Condition.

THE term *condition*, as applied to dogs, is correspondent with the same term as used among horses ; and is intended to characterise a healthy external appearance, united with a capability, from full wind and perfect vigour, to go through all the exercises required of them. It is, therefore, evident, that *condition* is of material consequence to sportsmen : indeed, it is of infinitely more importance than is generally imagined. What would be thought of the sporting character, who should enter his horse for racing without any previous training ? And how much chance would he be presumed to have, even to save his distance, without this precaution ? Is it not equally reasonable to suppose that pointers, setters, spaniels, and, more than all, greyhounds, require training ; or, in other words, to be in full *condition* also ? It is notorious, that pointers, setters, and spaniels, if they are what is termed *foul* in their coats, never have their scent in perfection. It must be equally evident that, unless they are in wind, they cannot range with speed and durability ; and, without some previous training, it is impossible they should be in full wind. Those persons, therefore, who expect superior exertion from their dogs in the field, would do well to prepare them by a previous attention to their *condition*. In greyhounds, intended either for matches, or simple coursing, it is evident that this is absolutely necessary to insure success. In simple or mere coursing, they are pitted against an animal very nearly equal in speed to themselves, and which animal is always in condition by its habits. If, therefore, a dog of acknowledged goodness is beaten by a hare, especially at the beginning of the season, it is ten to one but the condition of the dog is at fault. It is self evident that a perfect condition must be more than equally important in coursing matches.

The manner of getting dogs into condition is very simple, and either consists in reducing the animal from too full and soft a state, to one of firmness and less bulk : or it consists in

raising a lean and reduced dog to lustiness, hardness, and vigour. Some sportsmen prefer the one state, and some the other, to begin upon. If a dog is fat, his treatment must be immediately begun upon by physic and exercise, but not by a privation of food ; and it must be particularly observed, that his doses of physic be mild, and often repeated. The exercise should be at first gradual and slow, but long continued ; and at last it should be increased to nearly what he will be accustomed to when hunting. If there is the least foulness (*i. e.* if the secretions of the skin are impure) apparent in the habit, besides physic and exercise, alteratives should be given also.—See **ALTERATIVES**.—Some sportsmen regularly dress their dogs, before the hunting season, with sulphur, even though no breaking out appears, and I by no means think the practice a bad one. Others curry or brush their dogs, whether any skin affection appears or not ; and, to greyhounds, it is a very proper means of keeping up the equilibrium of the circulation, and of promoting muscular elasticity.

When a *lean* dog is to be got into *condition*, less physic is necessary ; but good flesh feeding, plenty of exercise, and a due administration of alteratives, are principally to be resorted to : nevertheless, one or two doses of very mild physic will here also promote the condition, and even assist the accumulation of flesh.—See **FEEDING and EXERCISE**.

Costiveness.

ALL carnivorous animals have naturally a dry constipated habit. Dogs are of a mixed nature, and can live indiscriminately on vegetable or animal substances, although they prefer the latter, which, as it is more congenial with their habit of hunting, is not to be wondered at. Dogs have, therefore, very frequently a tendency to a costive habit ; which tendency is increased or lessened according as they are supported, wholly

or in part, on animal matter. The dogs that are kept as favourites about the person, are too apt to have their inclination for animal food indulged, which, added to their confinement, and the heat in which they live, greatly aggravate this tendency to costiveness in them.

Costiveness is productive of numerous evils; it increases the disposition to mange and other diseased secretions. It also produces indigestion, encourages worms, makes the breath foetid, and blackens the teeth: but it is principally to be avoided from the danger, that the contents of the bowels may accumulate and bring on inflammation.—See INFLAMED BOWELS.—Whenever a dog has been costive three days, and one or two moderate aperients have failed of opening the bowels, it is not prudent to push the means of relief farther by more violent purgatives; for this would be apt to hurry the contents of the intestinal canal into one mass, whose resistance being too great for the bowels to overcome, inflammation follows. Mild aperients may be continued, but clysters are principally to be depended upon.—See CLYSTERS.—In such cases, the introduction of the clyster pipe will often detect a hardened mass of excrement. If the action of the pipe, or the operation of the liquid, should not break this down; it is absolutely necessary to introduce the finger, or, in a very small dog, a lesser apparatus, and mechanically to divide the mass and bring it away.

The recurrence of costiveness is best prevented by vegetable food, and exercise: but when vegetable food disagrees, or is obstinately refused, boiled liver often proves a good means of counteracting the complaint.—See FEEDING.

Cough.

DOGS and horses are both very subject to coughs; but, while the latter have only an acute and a chronic kind to contend with, dogs are troubled with several kinds; and, as

these arise from very different causes, call for varied treatments, and have very different terminations; so they require particularizing. One of the most common coughs to which dogs are liable is that which usually accompanies distemper. This, in general, is short and dry, producing an effort to bring up a little frothy mucus. This cough usually appears when a dog is just attaining his full growth, at some time between four and twelve months. When, therefore, a young dog coughs much, shivers, is dull, and wastes in flesh, though he may eat as usual, it is more than probable that such dog has the cough of distemper; which must be treated by the means recommended under that head.

Sometimes a young full grown dog has a short occasional cough, that may likewise produce nausea, with the accompaniments of staring hair, and foetor of the breath. This kind arises usually from worms, and is to be cured by the means recommended under the article WORMS.

Dogs are also liable to cough from a common cold taken. This kind of cough may be distinguished from any other, by its particular shortness, by its distressing frequency, and by the fulness and redness of the eyes; the ears and paws will also generally be found cold.—See INFLAMED LUNGS.

Another frequent cough in dogs is the asthmatic one, which usually comes on slowly; gradually becoming hollow and sonorous. It is at first less frequent than either of the former coughs, until the complaint has attained its full height, when it is most urgent and constant. The cough of asthma may be readily distinguished from the others, by attending to the subject ASTHMA.

Cramp.

See SPASM.

Cropping.

THIS barbarous custom is one that would be more honour-ed in the breach than in the observance of it. Nature gave nothing in vain; some parts being intended for use, and some for beauty. That must, therefore, be a false taste, which has taught us to prefer a curtailed shape to a perfect one, without gaining any convenience by the operation. As the custom, however, is now fixed, directions are proper for its performance.

Young dogs should not be cropped before the fourth or fifth week of their age: when the ears are cut earlier, they sprout again, and the form of the crop cannot be so well directed as when the ear is more developed. It is a barbarous custom to twist them off by swinging the dog round, and the crop never succeeds so well as when made by scissars, which should be large and sharp.—In cropping terriers, begin at the hinder root of the ear, close to the head; and, when this cut is carried through, one other cross cut from the root at the front of the head, if managed with dexterity, will be sufficient, and will make an excellent fox crop, without torturing the animal with numerous trimmings. The less oblique the second cut is carried, the more sharp and foxy will the crop prove. A rounded crop may be made at one cut. The cropping of pug puppies is the most painful of any; the cuts must, in general, be repeated, and carried close to the root of the ear; as upon the total absence of external ears (which gives an appearance of roundness to the head) is the beauty of the animal *supposed* to consist *. It is best to crop puppies in the absence of the bitch; for it is erroneous to suppose that her licking the wounded edges does them

* It is not a little surprising that this cruel custom should be so invariably practised on pug dogs, whose ears are particularly handsome, and hang very gracefully. It is hardly to be conceived how the pug's head, which is naturally none of the handsomest, is improved by suffering his ears to remain.

good; on the contrary, it only increases pain, and deprives the young animals of the best balsam, which is the blood.

Rounding, which is a species of cropping, is also performed on pointers and hounds, both as a prevention and cure of the canker; but in rounding only a portion of the flap is taken off. When rounding becomes absolutely necessary for the cure of canker, all other means having failed (see CANKER), care should be taken that the cutting may go beyond the root of the canker, or the disease will return. When rounding is performed on a number of dogs, it is, in general, done with a rounding iron.

Tailing.—When a dog is cropped, it is usual also to cut off a portion of the tail. Dog fanciers, as they are termed, commonly bite it off; but it were to be wished that a larger portion was added to both their knowledge and humanity. The tail does not grow materially after cutting, therefore the length may be previously determined on with sufficient accuracy, and cut off with a pair of sharp scissars. If the ears and tail are cut off at the same time, it is prudent to tie a ligature about the tail to prevent the effusion of blood, as sometimes the bleeding, from both ears and tail together, will weaken the animal too much; but, when the tail alone is cut, no ligature is necessary. When a ligature is used, neither tie it too tight, nor suffer it to remain more than twelve hours.

Cystitis.

See INFLAMED BLADDER.

Diarrhœa.

See LOOSENESS.

Dislocations.

THE joints most liable to this injury are the shoulder and knee before, and the stifle and hip behind. It is not easy for any person to effect the reduction of a dislocation, but one habituated to the practice of surgery, and acquainted with the anatomy of the animal. As circumstances, however, necessary to observe in all cases, it may be remarked that, when a dislocation has happened, particular care should be taken to examine whether there is a fracture also, which is frequently the case. Under these circumstances the treatment is rendered more complex, from the difficulty of reducing the dislocation, without using too much violence to the limb.—*See FRACTURE.*—The mode of detecting a fracture in these cases is not difficult. On moving the joint, in case there is fracture, there will be an evident roughness and grating of the bones, which will be sensibly felt by the hand.

When it is attempted to reduce a simple dislocation, it is evident that the direction in which the dislocated bone is parted from its socket should be first taken into consideration in the means used for reducing it. A moderately firm extension should then be made by two persons; one holding the body and one part of the joint, and the other supporting the immediate dislocated limb, at the same time giving the luxated end a direction towards its socket. If this extension is sufficiently and properly made, the dislocated bone will slip into its place, and render the limb perfect. When the shoulder is dislocated from the arm, which is a rare occurrence, the dislocation may be forwards or backwards: it occurs generally forwards. The elbow may be dislocated either inwards or outwards; but it happens more frequently inwards, and is seldom dislocated without a fracture also.

The hip joint is oftener dislocated than either of the former, and it is most common for the head of the thigh bone to be carried upwards and backwards, which makes the hip of that side sensibly higher and more backward than the other,

and renders it easily detected. The muscles of the loins are so strong, that reduction of the thigh is always difficult; however, a firm and judicious extension will effect it. The hind knee, or stifle joint, which is that next the hip, is also subject to dislocation. This more frequently occurs inward than outward; and, from the strength of the surrounding muscles, is also often found difficult to reduce. It is but seldom, likewise, that the elbow is dislocated without a fracture also.

When a dislocation has been reduced, a pitch or other adhesive plaster should be applied around the joint to keep it in its place, which may be further assisted by a proper bandage. It may be useful to remark, that the inexperienced practitioner can no way detect the presence of either a dislocation or a fracture, so well as by comparing the sound limb or joint attentively with the unsound one.

The Distemper.

THIS scourge to the canine race, now so general and common, does not appear to have been known a century ago; and even yet, throughout the European continent, it is described rather as an occasional epidemic which visits the different countries every three or four years, than as a fixed complaint, like the measles or hooping cough in the human*.

* In the *Grand Encyclopédie Méthodique* the disease is thus described: "Il c'est jetté, il y a quelque années, une maladie épidémique sur les chiens dans toute l'Europe; il en est mort une grande partie sans que l'on pût trouver de remède au mal."—*Livraison LIX Chasses.*

In the *Venerie Normande*, by Monsieur DE LA CONTERIE, the Distemper is also described as a disease but lately observed: "Depuis vingt ans les chiens courants plus que tous les autres ont été affligés d'une maladie que se communique aussi facilement que le galle ou la petite verole, et que maintenant est nommé sous le nomme simple de la maladie. C'est une sorte de peste parfaitement ressemblante à la gourme des chevaux. Si on me demande quel remède il faut employer contre

Our continental neighbours appear to have transmitted it to England, where also it seems first to have appeared in the form of an epidemic, but now exists as a permanent disease, to which every individual of the canine race has a strong constitutional liability. That we imported it, is evident from the circumstance that the earliest notices we have of it in sporting works* are subsequent to its announcement in the

“cette maladie, je réponds qu’après en avoir fait cent pour un, je me suis convaincu qu’il n’y est aucun d’efficace, quand elle gagne un certain degré.”—P. 497, 500, 8vo, *Rouen*, 1760.

In opposition to this *late* appearance of the distemper, it has been conjectured that it was not unknown to the antients, and was by them called the *Angina*, being one of *three* diseases to which dogs, according to them, were liable; Madness and Podagra forming the other two. But an attentive examination of the symptoms, as detailed by Aristotle, Ælian, and such other antient authors as have left us their observations on the canine race, will clearly show that the *distemper*, as it is known among us, was unknown to them. Their *angina* appears to have been an accidental epidemic, which confined its attacks almost wholly to the throat, producing faucial imposthumes, like strangles in horses, or quinsy in the human; but the grand characteristic, of primary and continued discharge from the nasal mucous membranes, is wholly unnoticed.—See ÆLIAN *de Nat. Animal*, lib. iv, c. 40; ARISTOTLE *Hist. Animal*, lib. viii, c. 22, &c. &c.

* Of late years, the prevalence of this complaint has engaged the attention of many distinguished characters. In every treatise of sporting, in some agricultural works, and in one or two veterinary publications, it has been treated of. A few eminent medical men have also noticed it; among whom Drs. JENNER and DARWIN stand foremost. The former ever to be revered character, whose philanthropy and general worth have reared him an imperishable monument, has drawn a portrait of the disease in the *first volume of the Medical and Chirurgical Tracts*, which is sufficiently perspicuous and characteristic for the general purposes of description, but infinitely too contracted to make it a practical reference in this eternally varying malady. Dr. JENNER was induced to turn his attention to the subject from an impression on his mind, that vaccination would prove a preventive to distemper as well as to human small-pox. Unfortunately both for the human and the brute, he was partially mistaken in the one, and there is too much reason to fear wholly so in the other. Vaccination, as far as my experience goes, neither exempts the canine race from the attack of distemper, nor does

pages of similar continental publications ; and also from our having designated it by a translation of the popular term it was first known by in France, *La Maladie*. But although the distemper may be now considered as a constitutional disease, like measles or hooping-cough, it nevertheless still puts on, occasionally, not only its epidemial, but also an endemic appearance, and ravages the dogs of a particular district more than of others ; and, now and then, when it attacks with epidemic fury and peculiarity the dogs of London or other large cities, it is scarcely observed among those in the country. In an epidemic form the disease presents many varieties. I have seen it accompanied with marked biliary affection in every dog attacked that season : many of the cases of that period had also a pustular eruption. I have seen it also make its appearance in a few cases, and during one particular season, by a phlegmonous tumour of some part of the body, but principally of the head. In the summer of 1805, many of the distempered subjects had a peculiar affection of the

it appear at all to mitigate the severity of the complaint. I am aware that the point is yet at issue, and that the practice of vaccination is still continued among dogs ; but I have seen such palpable and repeated instances of failure, when operated on in the most careful manner ; and I have, in the alleged instances of its success, been enabled to trace the matter so clearly to the operation of accidental circumstances, or the report to exaggerated statements ; that I have no hesitation in pronouncing it wholly inefficacious as regards dogs.

With Dr. DARWIN the distemper is a debilitating catarrh, which is best treated by free access to the open air, which, as it passes over the ulcerated surfaces of the nasal membranes, will tend to heal them. Distempered dogs should also be allowed to drink water from a running stream, that the contagious mucus of the nostrils, having escaped one passage, may not again enter another, and thus re-poison the dog. Such is the theory and treatment of this disease, according to this fanciful author ; and equally unsatisfactory appear all the various descriptions and directions relative to it, scattered about in sporting and other works. Neither can it be otherwise, when in most instances the disease has been described from the appearances as they presented themselves in one kennel ; often as it appeared in one litter ; or even from a single individual.

bowels, in addition to the other symptoms. It commenced suddenly, like spasmodic cholic, appeared to give great pain, but neither constipated nor relaxed the bowels. It usually continued acute two or three days, and then terminated fatally. In such cases as did recover, active purgatives of calomel and aloes appeared beneficial. It may be remarked, that, whenever distemper rages as an epidemic, it commonly assumes some characteristic type. One year shall be remarkable for the harassing and obstinate diarrhœa that appears; another from the more than usual tendency to convulsive fits; while in a third, a malignant putrid type will sweep off many. I have likewise noticed, that convulsions are most prevalent in winter, and purging in summer. As a general rule, this, however, like others, is subject to variation.

The distemper has now become so naturalized among our dogs, that very few escape the disease altogether. A constitutional liability to it is inherent in every individual of the canine race*, which predisposition is usually acted upon by some occasional cause. The predisposition itself, in some breeds, seems sufficient to produce it, and such have it frequently very soon after birth†; but the predisposition is more frequently acted on by some occasional cause, of which there are many. Contagion may be regarded as the principal of these: few dogs who have not passed through the disease escape it when exposed to either the effluvia, or to the contact of the morbid secretions received on a mucous or an ulcerated surface‡; yet inoculation with distemper virus

* I am not aware whether the other members of the canine genus, the wolf, fox, and jackal, are subject to the distemper: I believe no proof exists that either of them are so; and, as I should suppose the disease to be of factitious origin, so I would consider them as exempt.

† This appears particularly in the diminutive breeds, as pugs, fancy spaniels, pigmy terriers, Italian greyhounds, and other varieties artificially reared and treated.

‡ The general transpiration or *effluvia* from the surface of the body is of a particular kind in distemper: to those acquainted with the disease, it is impossible to mistake the peculiar odour occasioned by it. This

frequently fails to produce it, and the disposition to receive the contagion is, likewise, not always in equal force, but it appears stronger or weaker at various periods in the same animal, and is perhaps under the controul of the accidental changes in health, fulness of habit, &c. &c. Cold applied in any noxious manner to the system is a very common origin of the complaint; throwing into water, washing, and not afterwards drying the animal; unusual exposure during a night, &c., are frequent causes of distemper in young and tender dogs. I have seen it produced by violent haemorrhage, by a sudden change from a full to a low diet*, and, in fact, any great or sudden derangement in the system is sufficient to call the predisposition into action.

The usual period of its attack is that of puberty, or when the dog attains his full growth: in some it is protracted to two, three, or even many years old; and a very few escape it altogether. The having once passed through the disease is not a certain preventive to a future attack. It occasionally appears a second time; and an instance fell under my notice of a third recurrence, with the intervention of two years between each attack.

Dogs in confined situations certainly have the disease with

effluvia, I have reason to believe, is alone sufficient to occasion the distemper in another dog: that the *miasma* arising from the morbid secretions of the eyes and nose will do it, I have numerous proofs; but I doubt whether the morbid matter itself, received into the stomach, independent of the other contagious agents, will generate the complaint: some experiments tend to prove that in this mode the matter is innocuous. In general cases, both the effluvia and the contact of the morbid matter received on a mucous surface, as the nose, lips, &c. are so highly contagious, that a very short exposure to the one, and a momentary application of the other, are sufficient for the production.

* I have constantly found that full feeding, so as to produce fatness, is the best preventive against a premature attack of the distemper, which is to be dreaded from the constitution not having gained strength sufficient to enable it to withstand the debilitating effects of the disease. In puppies that are fat and full fed, not only is the complaint protracted, but, when it does make its attack, such dogs always fare best under it.

greater severity than those in the country ; nevertheless there is by no means that extreme disproportion in the severity which is observed in many other instances. Some breeds have it much worse than others ; and while all the litters of one bitch will be found to possess it with constant and fatal severity, those of another will as usually pass through it favourably. Particular varieties have it also with different degrees of malignity. To greyhounds and pugs it is peculiarly fatal : terriers have it worse than spaniels ; and setters, I think, fare worse under it than pointers. It may likewise be regarded as a general rule, that the younger the dog the greater will be the severity of the disease : very young dogs seldom live with it.

The distemper commences its attack in various ways ; its symptoms throughout are marked with more variety than appears in any other complaint ; and, whether we consider its first attack, its progress, duration, or termination, all are alike variable. Some symptoms are, however, common to most cases, and some appearances are usually found in all. Of these I will first endeavour, for the sake of perspicuity, to give an outline ; and afterwards notice the numerous variations that occur.

Among the early symptoms of distemper, a short, dry, husky cough may be reckoned as one of the most common. In some cases, this cough is never severe throughout the complaint ; in others, it increases until it becomes constant and distressing, producing, by its irritation of the fauces, ineffectual efforts to vomit ; but a little frothy mucus only is produced by the joint act of the stomach and lungs. A few escape with little or no cough at all. A watery secretion moistens the eyes and nose in the early stages of almost every distempered case. Sometimes, this appearance precedes the cough ; at others, it succeeds it ; and sometimes they appear together. This flow from the eyes and nose (which is nothing more than the natural mucus of the parts thinned and increased by inflammation) in a little time takes on another appearance, and, as partial or total ulceration follows, so the secretion takes on a thick-

ened mucous or purulent form, and pus, or matter, flows from the eyes and nose, and, now and then, from the ears also. When the secretion has become thick and pus-like, the dog, when first seen in the morning, presents himself with his eyes and nose stopped or glued up with the viscid matter which exuded during the night. During the day, the irritation produces frequent sneezing, and a disposition to rub the nose and eyes violently to relieve them. In many cases, a lessened appetite, dulness, and emaciation, precede all other appearances; and when they are not the precursors to the complaint, they are certain to follow in the train. As a necessary consequence of the fever attendant on the disease, a quickened pulse, hurried respiration, shivering, disinclination to exercise, impatience of cold, and anxiety for warmth, are also present in every well marked case. Diarrhoea, or looseness, is now and then a very early symptom also; in others, it does not appear so early; but, in all, it is too apt to make its appearance at some period of the complaint. A general prostration of strength marks every bad case of distemper: in some it comes on very early, in others it is more protracted; but in all it proves, sooner or later, a certain accompaniment to the complaint. It is not uncommon, whether the general weakness is trifling or considerable, for a peculiar paralytic debility to appear also, which is more frequently confined to the loins and hinder extremities; in which cases, although the fore parts may remain tolerably strong, the hinder ones will appear very and sometimes totally paralyzed. Now and then this paralytic tendency extends to all the limbs, and to the head also, when the animal is seen to reel as though drunk, or to become affected with spasmodic twitchings.

From this summary of symptomatic appearances, it may be fair to characterise the distemper as a specific contagious catarrh, that commences its attack on the mucous membranes of the head, on those of the bronchial passages, or on the membranes of both at the same time; and, according as the one or the other, or both, are the immediate and primary

subjects of attack, so do the symptoms vary. When the membranes of the head, particularly those of the eyes and nose, are the parts first attacked and principally affected, the animal exhibits all the symptoms common with a human person labouring under what is called a cold in the head ; as weight and heat in the forehead, sneezing, moisture from the eyes and nose, first thin and watery, then thicker and mattery, or pus-like ; with shivering, listlessness, lessened appetite, and impatience of light often. But when the bronchial passages are the first objects of attack*, a short dry cough usually precedes these symptoms ; and if the lungs themselves become affected with a symptomatic peripneumony, a quickened respiration is observed, with an increased severity of the other symptoms ; but, as the specific seat of the disease is in the pituitary or nasal membrane, so it is seldom that the foregoing symptoms are wanting, for, if they do not appear before the cough, they very soon follow. In the early stage above described, the disease is sometimes successfully combated by easy methods, sometimes without any assistance at all ; it continues for a week or two to affect the animal mildly, and then gradually disappears. However, in many, indeed in most cases, particularly among high bred and artificially treated dogs, the disease does not continue to confine its attack wholly to the nasal or bronchial membranes, but either through the medium of continuity, contiguity, or of sympathy, it proceeds to affect other parts ; when other symptoms and appearances become superadded to those already noticed. From the nasal membranes, the affection appears often transmitted (probably through the medium of the frontal sinuses) to the cerebral coverings,

* I think I have observed, that when pneumonic symptoms are the first marks of the complaint, or, in other words, when cough, wasting of flesh, dulness, and loss of appetite, precede the running from the nose and eyes, the case may be commonly traced to a cold taken. When the disease is derived from another dog, by contagion or infection, the eyes and nose usually evince a primary affection of the head more than of the chest. I, however, by no means consider this as a fixed rule.

perhaps to the brain itself; where its effects produce, in some cases, that paralysis of the loins and hinder extremities before noticed; and in others, spasmodic movements, or twitchings, over the muscles of a part or of the whole body, which, when they are violent, give the sufferers a grotesque and ridiculous appearance. Both the paralysis and these spasms remain, in some cases, for months after the other symptoms have disappeared, and, sometimes, even through life. When the cerebral affection is more acute, a symptomatic epilepsy appears in the form of those convulsive fits so common and so fatal to distemper. These fits are generally, at first, trifling, and are often confined to the muscles of the jaws, which appear to champ, as though irritated by an unpleasant substance put into the mouth; a little foam is usually produced by the champing, and in two or three minutes the affection ceases. Cold water thrown in the face, or even a little encouragement by fondling, will frequently immediately remove these attacks: but it is very seldom that these convulsive appearances, however trifling, having once occurred during the progress of distemper, but that they are followed up by others, at uncertain intervals of a few minutes to a few hours, each succeeding fit increasing in violence until the whole frame is contorted by the effect of the convulsion: the animal cries, rolls, runs round, or is drawn first to one side and then to the other. The fits are attended sometimes with a total, sometimes with a partial mental alienation. When it is total, the dog is most violent; he waters and dungs unconsciously, he tears up the ground, bites every thing around him, and not unfrequently himself also. When the fit is over, he shakes himself, and looks and acts as usual, unless the attacks are very violent and long continued, when they leave him greatly exhausted and dispirited. The second, third, or fourth day from the first appearance of these epileptic attacks commonly closes the scene, the animal being worn down by the additional strength and increased frequency of each succeeding recurrence.

The attack of convulsions may be often foretold for some

days even previous to its appearance. When, during great emaciation and loss of appetite, a distempered dog suddenly appears more cheerful, eats heartily, and shews more brightness and briskness of the eyes than before, it may be expected that he is going to be attacked with fits. If the appetite becomes at once not only considerable but greedy, and the eyes look very bright and sparkling, the event may be considered as certain. In some instances, the sudden stopping of the looseness is likewise the forerunner, perhaps the occasion of fits: but it is remarkable, that, when the diarrhoea is overcome by medicine, such an event rarely occurs. A cessation of the secretion from the head will sometimes likewise occur before the epileptic attack, and it is by no means difficult to conceive how so sudden an alteration in the action of the contiguous surfaces may materially affect the brain. Dissection of subjects who have died from this sympathetic epilepsy does not throw much light on the nature of it; sometimes there is sanguineous effusion over the brain, and an increased vascularity of its membranes; in other instances, the cerebral substance has appeared to be slightly softened, and now and then an undue secretion has appeared within the ventricles.—See FITS.

Instances occur where, from the bronchial passages, the affection proceeds to the substance of the lungs, and produces all the appearances of peripneumony (which see). Now and then, so much congestion takes place within the chest, as to carry the dog off in a few days; but more frequently the pneumonic attack is less violent, and continues to harass him with a distressing cough, and every mark of inflammatory fever. From the lungs, the specific inflammation extends to the liver, oftentimes; in which cases the emaciation and debility become more peculiarly apparent; a pustular eruption often appears; the inside of the mouth, the whites of the eyes, and every part where the skin is naked, looks yellow; the urine is of a very deep yellow colour from the bile infused, and pain is expressed on pressing the belly. On the dissection of cases that have died in this way, I have fancied

I could distinguish some difference between the morbid appearances that the thoracic and abdominal viscera have presented from those apparent when the subjects have died from peripneumony, or hepatitis, unconnected with distemper. The parts subjected to the *specific* inflammation were more than usually pale, flaccid, and relaxed, and exhibited less vascularity than is usually apparent when the inflammation has been pure and unspecific.

After the distempered attack has been made on the head or bronchial passages, or both, it is not uncommon for the further violence of the affection to appear directed to the alimentary canal principally, in which cases a diarrhoea or purging commences, that often proves so obstinate as to frustrate every attempt to stop it; and it either proceeds to destroy the animal by emaciation (without, perhaps, any great apparent severity in the other symptoms), or, by its debilitating nature, it paves the way for an attack of the convulsions. Now and then, however, the diarrhoea precedes the other symptoms, but this is less common: it sometimes, also, precedes a declining appetite, but, in every instance, a total disinclination to food ensues when the looseness has extended beyond two or three days *.

* It would not be uninteresting to inquire how far the diarrhoea, so prevalent in distemper, may be considered as a primary morbid attack on the bowels themselves; or how far it is purely symptomatic, and dependent on a diseased state of other parts. We know that a relaxation of bowels is common in many human complaints, as phthisis pulmonalis, &c. &c., and which is more the result of a sympathetic influence than of a direct miasma applied to the organs themselves. We also know that a secondary miasma may be generated by the altered secretions of morbid parts. Are we to attribute the diarrhoea of distemper to these miasmata generated in the head, and then transmitted along the alimentary canal, or otherwise absorbed from the lungs, and carried by means of the circulation into the same track, where they produce their irritating influence, as we witness in cynanche maligna, and other putrid diseases? The early appearance of diarrhoea, in some cases, would lead to a conclusion that the former mode may operate; while the increased fre-

Another, and most fatal type of the disease, is that of a malignant putrid fever into which the distemper not unfrequently runs, either from its catarrhal, pneumonic, or hepatic states ; that is, however it commences, it does in many cases degenerate into this malignant state, particularly in very hot weather, or when an epidemic tendency to this type of disease is prevalent. These cases are characterised by an extreme debility, rapid emaciation, and total loss of appetite, accompanied with an enormous purulent discharge from the eyes and nose, but particularly from the latter, and sometimes from the ears also. As the disease proceeds, the pituitary discharge becomes extreme, of a most foetid odour, and often bloody ; sometimes a considerable nasal hæmorrhage will occur. The eyes likewise, and sometimes the ears also, pour out putrid pus ; the gums bleed, and the tongue is either furred with a dark crust, or presents marks of ulceration. Within the nose deep ulcers appear, the secretion from which is so acrid in many instances, as to produce a species of coryza, which excoriates the lips, cheeks, and every part it touches. Not only are the exhalations from the nose, eyes, and mouth, most foetid, but the whole body emits a cadaverous stench also. Diarrhoea is often present likewise, and tends greatly to aggravate the other symptoms, especially when the stools are bloody, which is very commonly the case. The duration of this malignant form of the disease varies according to its severity, the strength of the patient, or the means made use of to counteract it. I have seen it carry off a dog in three or four days, and I have not unfrequently witnessed its protraction to as many weeks ; but, in all, its fatal tendency renders it extremely difficult to combat. On dissection of such as die of it, not only the mucous membranes of the head and chest present ulceration, but the whole alimentary canal affords proof of its virulence, by livid spots

quency with which purging appears later in the complaint, would strengthen an opinion that the latter was the agent.

or ulcerated excoriations ; and the whole animal mass, solids as well as fluids, seem involved in one common putrid solution.

Treatment of Distemper.—According to the mode in which the disease attacks a dog, so must the treatment be conducted. It is to the numerous varieties in the complaint that we are led to attribute that endless number of remedies continually prescribed for it ; every one of which, from being occasionally beneficial, becomes, in the mind of the person using it, *infallible*. Distemper is, therefore, seldom spoken of among a number of sportsmen, but each of them is acquainted with *a certain cure, one that has never failed with him*. Whenever I could gain a knowledge of the composition, I have always given these nostrums, or private recipes, a fair trial : but I never yet found that any one of them answered the account given of it. In fact, the varieties in the complaint are so numerous, that hardly any two cases can be treated exactly alike ; consequently no one remedy can be equally applicable to all : for, however efficacious it may prove in a certain number of instances, in others it will produce but equivocal benefit.

Perhaps two out of every three cases of distemper commence by dulness, inclination to sleep, wasting, shivering, a husky cough, with a flow of moisture from the eyes and nose. In these instances, the proper course is to commence with an emetic.—*See EMETICS.*—Should there be any disposition to costiveness, provided the dog is strong and fat, give also a mild purge ; but if he is weakly, or the least inclined to looseness of bowels, abstain from the purge. After the emetic, or purge, has ceased to operate some hours, give one, two, or three grains of antimonial powder every morning, or every evening, or both, according as the symptoms are more or less urgent*. But, in cases where the cough is

* Where a prejudice in favour of Dr. JAMES's Powder exists, that may be given in similar doses ; but the *antimonial powder*, so called, is, to all intents and purposes, the same preparation.

frequent and distressing, the following powders will be preferable :—

Antimonial powder	12 grains
Powdered foxglove	8 grains
Nitre, in powder.....	half a dram.

Mix, and divide into ten doses if the dog is small, into seven if of a middling size, and into five if he is large ; and give one of them every night and morning. Continue this plan for two or three days ; after which, if the dog remains strong, give another emetic, and, when it is worked off, recommence the fever remedies. Should diarrhoea or purging come on, discontinue these medicines, and have recourse to those detailed under the head LOOSENESS OF BOWELS.

Should the bowels not be relaxed, as soon as the inflammatory symptoms have somewhat abated, and when, instead of a watery moisture, the eyes and nose exude pus, or matter, then the fever remedies, above described, may very properly give place to others.

It is at this period of the disease I have experienced the happiest effects from the popular *Distemper Remedy*, discovered by me. This medicine has stood the test of nearly thirty years' trial ; and although the varied appearances in the complaint render other auxiliaries absolutely necessary, yet no case of distemper can occur (that only excepted in which the purging continues without intermission) in which this Powder may not be given with great benefit in some stage of the disease.

Whenever, therefore, this Remedy is within reach, I would strongly recommend that it may be tried at this period of the complaint, according to the directions given with it. It should also be repeated as long as the benefit resulting from it is striking and marked. But as cases will occur where the debility which is apt to follow the purulent state becomes excessive, so it will be, in such cases, prudent to join with this Remedy the tonic remedy detailed below. Likewise, when the *Distemper Powders* are not at hand, or when they have been tried without evident benefit, it will be prudent, after the

directions already detailed have been complied with, to proceed with the following tonic plan of treatment alone; of which it is not too much to say, that it will prove nearly as universal in its application, and as salutary in its effect, as even the specific above alluded to:—

Gum myrrh	1 dram
Gum benjamin	2 scruples
Balsam of Peru.....	1 dram
Camomile flowers, powdered	2 drams
Camphor.....	1 scruple.

Mix with honey, conserve of roses, or other adhesive matter, into twelve, nine, or six balls, according to the size of the dog, and give one of them every night and morning.

If the weakness becomes extreme, if the matter from the eyes and nose flows rapidly, and is very foetid, add two drams of cascarilla bark, and a grain of opium, to the mass of balls. In such cases also, strong gravies, or gruel made as caudle with ale in it, should be given or forced down two or three times a-day. Meat balls may be also forced down, if the dog will not eat voluntarily.

During every stage of distemper, and under every variety, except the very inflammatory state which occurs in the commencement, it is proper to feed liberally; and, as soon as the animal refuses his food, it is equally proper that nutriment should be *forced down*.—See the subject of *feeding the sick* at the commencement of the work*.

But, from what has been remarked, it will be evident that the foregoing type is not the only one by which distemper makes its attack; on the contrary, it sometimes commences by diarrhoea or looseness, and which, instead of being hurtful, is unfortunately often supposed useful: in which cases, from a fear of the consequences of checking it, the dog is very fre-

* When food is voluntarily taken, it is infinitely to be preferred to *forcing*; every enticement should therefore be used to encourage this: but when *forcing* becomes absolutely necessary, the stomach should not be overloaded, or the animal may bring what is given up again, which, if once done, is very apt to be repeated after each forcing.

quently brought so low as to be past recovery. But it cannot be too strongly insisted on, that even in the very first stages of the complaint, and when even artificial purgatives seem to be indicated by the symptoms, this voluntary purging should always be considered as a morbid one, and promptly checked, if not entirely stopped. At all other periods of the complaint, it should be entirely and immediately stopped. At whatever period likewise it occurs, during the progress of the complaint, when other remedies are administering, it is proper that they should be suspended, and *astringents* only used, until the diarrhœa has entirely ceased, when the former remedies may be again had recourse to.—See LOOSENESS.

When the distemper appears with symptoms of great affection of the chest, as described among its varieties, bleed by the neck, blister the chest, and treat (as long as peripneumonic symptoms prevail) as directed under *inflamed lungs*; taking care to carry the depleting system on further than is absolutely necessary.

Sometimes, though not very frequently, the distemper commences its attack by a convulsive fit; in which instance also it is proper to begin the treatment by an emetic, and to follow it up by a purgative *. And at whatever period of the complaint this symptomatic epilepsy makes its appearance, immediately that the dog comes out of the first fit, give a very strong emetic, as the most effective means of all others to prevent a second attack. Should, however, other fits succeed after the emetic, the following medicine should be actively persevered in:—

Æther	1 dram
Tincture of opium (<i>laudanum</i>)	half a dram
Camphor	10 grains
Spirit of hartshorn	1 dram.

* I have observed that one, or even two, violent fits appearing thus early in the complaint, are not always followed by others, nor by any greater severity of symptoms than usual. Is such a fit at all similar to what sometimes precedes eruptive human complaints?

Mix, and give forty, sixty, or eighty drops, according to size, every hour or two, in a spoonful of ale, increasing the dose after each fit. Use a very warm bath, and keep the animal both warm and moist some hours afterwards, by means of wrapping in flannel and keeping before a fire: avoid irritation, force nourishment, and endeavour to shorten every fit, by sprinkling cold water in the face, and likewise by soothing language and manner, which have often the happiest effect in lessening the force and duration of the convulsion. If these means should fortunately succeed, continue to keep the animal quiet, and particularly refrain from giving much exercise, which is very apt to bring on a recurrence of the fits.

The importance of the subject renders it not improper again to repeat, that, of all the symptoms that appear, the epileptic convulsions are the most fatal. It is, therefore, of the utmost consequence to *prevent* their occurrence; for, when once they have made their attack, art is too apt to fail in attempting their removal. The best *preventive* means that I know of, are to avoid or to remove all circumstances tending to produce debility, as looseness, low poor diet, too much exercise, exposure to cold, extreme evacuation from the nose, and, no less, the operation of mental irritation, from fear, surprise, or regret; all of which, I must again repeat, are very common causes of fits in distemper*.

* The extreme fatality attending these fits prevents me from embodying in the substance of the treatment more means for their removal; but it may not be improper here to notice, that, in addition to the remedies detailed, I have occasionally administered cajeput oil, castor, musk, oil of amber internally and externally, belladonna, and nitrate of silver; but all with equivocal success only. Blisters to the head, and stimulating applications to the nostrils, I have also tried, with some alleviation of the violence and longer periods between the recurrence, but not with sufficient benefit to enable me to recommend them very strongly. A ligature round the neck, not tight enough to impede respiration, but sufficiently so to prevent a free passage of blood to and from the head, I have also tried, but I cannot say with any marked benefit; I feel how-

It yet remains to point out the proper treatment of such cases of distemper as degenerate into a malignant putrid type, either epidemic or occasional. The symptoms of this variety of the disease have been already detailed, and from them it will be evident that our curative endeavours should be principally directed to prevent the septic or putrid tendency that exists. As an internal medicine, either of the following mixtures may be tried; beginning with the first, and changing it for the second if it should produce purging, or not sit easy on the stomach, or if benefit does not follow its administration. Under either of these circumstances, the second may also be afterwards changed for the third:—

Acetated water of ammonia (<i>Mindererus's spirit</i>).....	4 ounces
Peruvian bark, in powder.....	2 drams
Tincture of opium	40 drops:

Or,

Yeast	2 ounces
Decoction of bark	2 ounces:

Or,

Spirit of nitrous æther.....	half an ounce
Camphor	half a dram
Aromatic confection	2 drams
Camomile infusion	4 ounces.

Give of either, one, two, three, or four table spoonsful, according to the size, every three or four hours. If diarrhœa should prove a bar to the administration, increase the opiate to twenty drops with each dose, or alternate these remedies with those detailed under the head *Looseness*; but in every case of this nature, diarrhoea is so much to be dreaded, that the attempts to restrain it must give place to every other, when, from its violence, the antiseptic and astringent plans cannot be carried

ever inclined to recommend a further trial of this experiment. Whatever means are resorted to, they should be prompt and active; for as these cases may be considered as otherwise hopeless, so very powerful means may be applied, and very active medicines employed with propriety.

on together. Food of the most nutritious quality, as already insisted on, should, in these cases particularly, be unsparingly administered. Free access of air is indispensable, and a constant change of litter and the removal of every thing likely to harbour the putrid exhalations, is most desirable. The foetor may be very properly corrected by sprinkling the place the animal is placed in with vinegar. I have, sometimes, used equal parts of vinegar and water as a daily wash to the body of the dog himself with benefit; and in very bad cases, when the running from the nose is extreme in quantity, bloody, and very offensive, and when ulcers are apparent within either the nose or mouth, or both, I would recommend both nose and mouth to be syringed or washed with the following, by means of a small piece of sponge tied to a skewer:—

Cayenne pepper	half a dram
Vinegar	2 ounces
Decoction of either peruvian, oak, or elm bark	4 ounces.

The malignant distemper is sometimes accompanied with a gathering of matter within a tumour which is usually situated near the commissure of the jaws. When the suppurative process is complete, and the tumour bursts, a malignant spreading ulcer succeeds, which, in all the cases I witnessed, the most active means proved insufficient to arrest.

It will, perhaps, excite some surprise, that I have so long omitted to mention that very popular remedy for distemper, *a seton in the neck*. In truth, I think setons very seldom deserve the commendation bestowed on them; on the contrary, I believe they sometimes do more harm than good. In the latter stages of the complaint, I am certain they weaken the patient, and prove very hurtful. In one state in which distemper sometimes commences, however, I think them highly advisable; and this is where there is evidently much active inflammation going on in the head: that is, when at the very outset of the complaint there is such an impatience of light,

that the dog cannot face it, but blinks, closes his eyes, and hides himself as much as possible from it. The state I allude to, is not when the eyes are closed with matter, but it is at an earlier period of the complaint, and when, in general cases, the eyes are affected with a watery moisture only, which in these instances is also present, but with a more than usual increase of irritability in these organs, rendering them unable to bear the light without pain. On looking into the eyes in such cases, the substance of the globe appears inflamed and bloodshot, and the pupil red and fiery. When these symptoms are present, I would recommend the use of setons in the neck, as the best means of causing a counter action. In such cases, also, warm steamings to the head, or even fomentations of vinegar and water, may be very properly tried. For, it may be regarded as a rule subject to few exceptions, that these appearances prognosticate that the animal will have the complaint badly; these cases, in general, becoming soon affected with convulsions. If a dog thus attacked is moderately strong, and in tolerable condition, bleeding and purging are also proper: but even here the lowering system must not be pursued too far, or it will hasten the attack of fits.

In the advanced stage of distemper, should the eyes become ulcerated, which is a very common occurrence, treat them as directed under **DISEASES OF THE EYES**: and it may not be improper to remark here, that those ophthalmic ulcers arising from distemper, though they may appear to have actually destroyed the eye, will yet often gradually heal, the parts will reinstate themselves, and the sight will return uninjured. This regeneration is, however, peculiar to the ophthalmia of distemper.

Finally, as a guide to the inexperienced, it may not be improper to recapitulate the general treatment under the usual circumstances of the complaint; for this end, the following rules may be regarded as a summary:—Feed liberally; carefully remedy a continued looseness of bowels; give exercise very sparingly; keep warm in every stage but the putrid; carefully avoid irritation; and ever keep in mind, that the

distemper is a disease, more than any other, liable to a recurrence: therefore do not discontinue the care or the medical treatment for at least three weeks after the recovery has appeared complete. And as a recurrence of the complaint frequently appears by one of those fits which have been described as so fatal, from their being so usually followed up by others, with increased strength and frequency, so this secondary attack should be carefully guarded against, by a continuance of the medical treatment of the first, for a considerable time after all the symptoms have disappeared; and until the health, strength, and acquisition of flesh, have become complete. But in the event of a return of the disease, should a fit be the first symptom of it, immediately give a *strong emetic*, and proceed as directed before. Should the recurrence be marked by returning dulness, and disinclination to food, or, as is the case sometimes, by a return of the looseness, so recourse should again be had to the former treatment directed as proper for these states; but principally the tonic or strengthening plan is proper in these secondary attacks, and which should again be continued even a more considerable length of time after all symptoms have ceased than before.

Dropsy

Is by no means uncommon in canine pathology. Dogs are most subject to ascites, or dropsy of the belly. In the next degree of frequency they have dropsy of the chest; less frequently they have encysted dropsy; and, least of all, are they subject to anasarca, or dropsy of the skin, unless when accompanied by ascites.

Ascites, or dropsy of the belly, as I have before remarked, is not an uncommon disease, and a prodigious quantity of water is sometimes accumulated within the abdomen. The causes of the disease are various. Among the most common are long-continued asthma, and a diseased liver. Mange,

also, of long standing and wholly neglected, very frequently degenerates into dropsy. The accumulation of water is sometimes slow, at others very rapid; and the symptoms that precede the attack are, of course, as various as the causes that produce it. In some cases the forerunner is a harsh cough; in other instances nothing is observed but a ravenous appetite *; and the dog, although he may eat an additional quantity, yet he will waste in flesh. Gradually, however, his belly begins to swell, and grows round, hard, and shining. The breathing becomes quick and laborious, and he lies down with difficulty; he drinks much: and, though in the early stages he may eat heartily, yet, as the disease advances, his appetite fails, and, sooner or later, he becomes suffocated from the impediment to the free action of the lungs.

Dropsy of the belly may be distinguished from fat, by the particular tumour that the belly forms, which, in dropsy, hangs pendulous, while, at the same time, the back bone sticks up, and the hips appear prominent through the skin: the hair stares also, and the feel of the coat is peculiarly harsh. It may be distinguished from pregnancy, or being in pup, by the teats, which always enlarge as the belly enlarges in pregnancy. The impregnated belly, however full, has not that tight tense feel nor shining appearance observed in dropsy. There may be also foetal inequalities distinguished in it, and, when pregnancy is at all advanced, the young may be felt to move. The most unequivocal mode, however, of detecting the presence of water is by the touch. If the right hand is laid on one side of the belly, and with the left hand the other side is at the same time tapped, an undulating motion will be perceived, exactly similar to what would be felt by placing one hand on a bladder of water, and striking it with the other.

* In these cases it is more than probable that the mesenteric glands have taken on disease: when dropsy is the consequence of diseased liver, the appetite is not usually so ravenous.

Treatment of Ascites, or Dropsy of the Belly.—The medical treatment, in these cases, is seldom attended with success, because the complaint itself is seldom primary, but the consequence of some other destructive chronic affection, as asthma, diseased liver, or inverted mange, which may have already committed fatal ravages on the constitution. Now and then, however, I have seen attacks of ascites apparently not preceded by either of these affections; and in these I have sometimes succeeded in obtaining an evacuation of the water, and in preventing a recurrence of it also. But such instances are so inferior in point of number to the others, that, in general terms, ventral dropsy may be described as a most fatal disease.

I have repeatedly tapped dogs; from some of whom I have drawn off many quarts of fluid, sometimes of a gelatinous consistence, at others simply serous and thin. In some instances I have repeated the operation two or three times, which has tended to prolong life; but eventually the same fate awaited all. The operation of tapping a dog does not differ in any respect from the same process in the human. A trochar is the most proper instrument for the purpose, but the operation may be performed by a lancet, and the puncture may be made in any part of the tumour not immediately bordering on the navel, or on the central line of the belly, taking care to examine that no considerable branch of artery, particularly the epigastric, is directly under the line of puncture, which may be readily known by careful examination with the fingers. The evacuation of all the water may be proceeded on at once without fear; the animal will express no uneasiness, nor faintness; but will conduct himself as though nothing had happened. A bandage moderately tight should be applied around the belly, and retained there many days, or even weeks, to assist the absorbents by its pressure.

I have also tried various other means for the evacuation of the water, but it is seldom they have afforded any permanent benefit. In a very few instances only diuretics have produced a salutary and durable effect: of the numerous articles of which

class I have found the digitalis, or foxglove, the very best. Now and then, however, other medicaments of this kind have succeeded when this has failed. I shall, therefore, detail such recipes as appear best suited to the case, observing that, with regard to the foxglove, it is most certain in its effect as a diuretic, as well in the canine as the human species, when it neither occasions sickness nor purging. The dose should, therefore, be always so regulated as to avoid these effects:—

No. 1.—Powdered foxglove	12 grains
Antimonal powder.....	15 grains
Nitrated potash (<i>nitre</i>)	1 dram.

Mix, and divide into nine, twelve, or fifteen parcels, one of which give night and morning.

No. 2.—Powdered foxglove	9 grains
Powdered squills	12 grains
Supertartrate of potash (<i>cream of tartar</i>). 2 drams	

Mix, divide, and give, as No. 1.

No. 3.—Oxymel of squills.....	1 ounce
Infusion of tobacco (as under)	half an ounce
Spirit of nitrous æther (<i>sweet spirit of nitre</i>)	half an ounce
Tincture of opium	half a dram
Infusion of camomile	2 ounces.

Mix, and give from two tea-spoonfuls, to a large table spoonful, night and morning. The tobacco infusion may be made by pouring two ounces of boiling water on a dram of tobacco.

I have, in some cases, combined calomel with the other remedies to the amount of half a grain, or a grain, night and morning; and this apparently with benefit. I have also tried the effect of strong mercurial purges twice a week, in cases where diuretic medicines failed of relieving. Friction and the warm bath have been also used, but without apparent advantage *. In the few cases wherein diuretics succeeded,

* In one case, one part of oil of turpentine, with two parts of olive oil, rubbed into the belly night and morning, appeared to excite absorption; but it must be noticed, that the turpentine was also given at the same time internally; to the amount of forty drops twice a day.

active stomachic tonics followed their use: in some instances they accompanied them. Nor should these be omitted where tapping is employed, as the only means likely to prevent the belly from again filling.

HYDROTHORAX, or DROPSY OF THE CHEST, is, likewise, not a very unfrequent complaint in dogs, and may be either chronic or acute; that is, the aqueous accumulation may be slow or rapid. When it is the former, it is usually the consequence of some other chronic affection, as asthma or neglected mange: although the latter most frequently produces dropsy of the belly. The rapid accumulation commonly succeeds to active inflammation of the lungs; in which cases, about the third day from the pneumonic attack, the water begins to be formed within the cavity of the chest, and increases so as to suffocate the animal in a few hours.—See **INFLAMED LUNGS.**

Dropsy of the chest may be known to exist by the extreme uneasiness the dog shews when he lies down, and by his attempts, under such circumstances, to elevate his head. The chest will also appear full and swollen, and the water within may be generally heard on motion. The beating of the heart will likewise afford a decided characteristic of the complaint; for the hand, placed on one side of the chest, will be affected with a kind of thrill, very different from the usual sensation produced by the beating of the heart of a healthy dog.

The *cure* may be attempted by the means recommended for ventral dropsy; but I have hitherto found the disease fatal in every instance *.

ANASARCA.—As before observed, this complaint very seldom occurs, unless as an accompaniment of ascites. I have,

* I never succeeded in restoring health, although I have frequently evacuated the water by means of a lancet cautiously entered between the ribs. Neither haemorrhage nor other immediately ill effects ensued from the operation itself; but every case still terminated fatally, either by gangrene within the chest, or by a fresh accumulation of fluid.

however, now and then seen it, and, in most of the cases, it was in old dogs who had laboured under some previous debility. In such instances, when any remaining stamina affords a chance for recovery, the treatment recommended for dropsy of the belly may be resorted to: very small punctures may also be made in the distended skin.

ENCYSTED DROPSY.—An accumulation either of serum, or of a fatty or gelatinous matter, within a particular sac, is thus called. The dropsy of the ovaria is by much the most frequent of this kind, and, to a certain extent, is very common in bitches; but it is in these general cases more an accumulation of fat than serosity. I have, however, seen instances of true ovarian dropsy of the hydatid kind, which all terminated fatally, although they proved very slow in their progress.

These encysted cases of dropsy are detected by the swelling being less universally diffused over the belly, and by the undulation being more obscure. The swellings likewise, in these instances, may be often traced to have commenced on one particular side, and to have first appeared high in the loins, not descending until carried down by their weight.

The *treatment* proper to pursue in no wise differs from that directed in ascites; but I never witnessed more than one case which terminated favourably, and in that I discharged the fluid contents by a trochar effectually: in others this mode failed.

HYDATIDS, independent of the ovaries, likewise now and then, but very rarely, form a species of dropsy in other parts. I have seen them in the liver, the lungs, the spleen, and the brain.

Dysentery.

As an idiopathic affection of the bowels, I have not observed dysentery among dogs; but, in the malignant distemper, it is not uncommon for the diarrhoea that usually accompanies it, by inflaming the mucous surface of the intes-

tines, to put on a dysenteric appearance, occasioning a diseased increase and separation of their mucous secretion, which appears in every stool in considerable quantities.

Ears, sore.

See CANKER.

Emetics.

VOMITING appears almost a natural act in dogs ; at least it is one that they voluntarily excite, by eating emetic vegetables, as the long wild grass, so hurtful to pastures. Dogs, in common with all quadrupeds who eat animal matter, are subject to irregular digestion and a train of sensations that we denominate bilious. In the canine species these are particularly prevalent ; and dogs appear to be instinctively taught to relieve themselves from them by an emetic, which they take more frequently, when they can procure it, than we are aware of. It is evident, therefore, that such as are much confined, and those who inhabit large cities, must suffer in their health from the want of this usual evacuation. To remedy this, when circumstances wholly prevent their reaching the grass, or other emetic vegetables, some of the dog grass might be brought to them, either gathered, or the roots of it might be placed in pots for their use. It may be obtained by the Londoners in Covent Garden. In default of this, a mild occasional vomit, or tartarised antimony, emetic tartar, common salt, or other emetic substance, may be very properly substituted, and which I have frequently recommended, to the great benefit of the animals who have used them.

In various diseases, the benefit resulting from the use of emetics is still more striking ; and, throughout the work, directions for their employment will be found frequent. A

good domestic vomit is common salt, in quantity from half a tea-spoonful to a desert-spoonful ; but it is sometimes violent in its operations, and, therefore, not to be chosen for delicate constitutions. Calomel often proves an emetic to dogs: *see ALTERATIVES.* Turpith mineral, and crude antimony, are given as emetics by sportsmen ; but the former is extremely violent, and the latter uncertain. Tartar emetic forms the most convenient article for this purpose, and is at once safe and easy to give. From one grain to three or four, according to the size of the dog, may be given in a pill, or in a piece of meat, or it may be dissolved in milk or water.

Enteritis.

See **INFLAMED BOWELS.**

Epilepsy.

See **FITS.**

Exercise.

THE want of due exercise is the cause of nearly one half of the diseases of dogs ; and the ill effects of this deprivation are very often heightened by inordinate feeding also. It should be remembered, that a dog is an animal of prey, destined, in a natural state, to hunt for his food, and to sacrifice to his appetite lesser and weaker animals, whose exertions to escape must keep him in a continual habit of most active exercise. In this life of nature, dogs probably do not get a regular and full meal twice in a week. How great, therefore, must be the difference, when they are either shut up in a

warm room twenty-two out of twenty-four hours ; or are, perhaps, fastened by the necks for many months together, without any other exercise than what the length of their chain allows them ! In such cases, if they have plenty of air, and are moderately fed, the want of exercise shews itself by mange or canker. If the repletion does not escape by this outlet, then the effects become apparent by an enormous increase of fat, which usually ends in asthma and dropsy.

Nothing affords a stronger conviction of the necessity of exercise to animals than their natural love of play, which was given as a principal means of preserving health. In cities and great towns it is a very excellent plan to teach puppies to play with a ball ; by which means they will exercise themselves very well in wet weather, or when they cannot be taken out ; and, when early taught it, will continue through life attached to the exertion. Those who will not amuse themselves in this way, yet may all be taught to fetch and carry. A very mistaken opinion prevails, that, because a dog is turned into a yard or court an hour, or half an hour, that he exercises himself ; on the contrary, in general he regards this as a punishment, and sits shivering at the door the whole time.

Dogs are more disposed to take exercise in company than alone : emulation induces them to run and frolic with each other ; it is prudent, therefore, to allow every favourite a companion. For sporting dogs, constant exercise is also *essentially* necessary. When they are *laid by* for the season, if they are close kennelled, it is very common, when they are again wanted, to find them fat, with little wind, and easily fatigued ; for not only are they out of the habit of exertion, but the muscles of the body have actually become lessened, and hence weakened by inactivity. Exercise improves the wind, by taking up the surrounding fat from the heart and chest ; thus allowing the lungs to expand more freely. But, whenever circumstances absolutely preclude exercise altogether, then greater circumspection should be

used in the feeding: it should be very moderate, and, as much as may be, composed of vegetables.—See FEEDING.

Fits in dogs are a very common consequence of confinement; and it is very usual for a dog, particularly a sporting one, who has been closely and long confined, on gaining his liberty, to experience a violent fit. I have observed the same occur in dogs after long voyages.

Exercise should, therefore, be allowed to every dog; and, as this should be done in proportion to his other habits, to lay down any general rule on this head is nearly impossible. The exercise of fat ones should not be violent, but it should be long continued: when it is too violent, it is apt to produce fits or cough, and thus, in the end, may prove the parent of asthma. Sporting dogs require gallops, to fit them for their work, and to give them wind; and, for this purpose, they should be taught to follow a horse. Lesser dogs, and all who are at other times confined, require at least two hours' exercise every day.

Eyes, Diseases of.

THE eyes of dogs are subject to several kinds of disease. The most common of these is an ulceration of the cornea, or transparent part of the globe of the eye, from a symptomatic ophthalmia occasioned by distemper. This affection of the eyes usually commences by a blueness, or sometimes by a perfect opacity of the transparent portion; in the centre of which a speck may be frequently seen, which gradually accumulates to a small abscess, and bursts, leaving an ulcer. This ulcer sometimes remains stationary till the distemper amends: in others it extends, and involves the whole pupil in an ulcerative process. In some cases a fungus forms, and protrudes outwards. One circumstance is peculiarly worthy of remark in this affection, which is, that the eye can become

more deranged in this disease, and yet recover again, than in any other ; for, after an extensive ulceration has formed, and excluded nearly all vision ; when the distemper leaves the animal, the eye gradually clears itself, and no vestige of the disease remains behind.

The proper *treatment*, therefore, in such cases is, to attend principally to the distemper ; for, as before observed, when that amends, the eye will do the same. However, it will be prudent to check the devastation from proceeding, by a seton in the neck, by fomentations of poppy heads, when the eye is very much irritated and inflamed : or by the use of the lead wash prescribed below, in the beginning ; and by the sulphuric ones that follow, as the disease advances.

Another spurious kind of ophthalmia (the effect of distemper also), but altogether distinct from the one already described, is not uncommon. This bastard ophthalmia occurs very early in the complaint. The eyes look red, the conjunctive membrane is more than usually vascular, but the transparent not very opaque, and there is invariably present an impatience of light.—See DISTEMPER.

In the idiopathic or true ophthalmia, the eyes become suddenly weak, water much, and, if viewed in the light, look red at the bottom, and within the eyelids also. There is usually at the first not much opacity of the cornea ; but it soon comes on, and extends over the whole surface, seldom, however, proceeding to ulceration. There are always marks of pain, irritation, and impatience of light.

The treatment should be begun by bleeding. Afterwards insert a seton in the neck, and give, every third day, a purgative. As long as the irritation is extreme, foment the eyes with a poppy head fomentation ; use also the following as a wash frequently :—

Superacetate of lead (<i>sugar of lead</i>)	half a dram
Rose water.....	6 ounces.

When the inflammation is somewhat moderated, use the following :—

Sulphate of zinc	a scrupule
A weak infusion of elm bark	6 ounces
Brandy	1 tea-spoonful.

Sometimes the following has moderated the irritation when other applications have failed :—

Tincture of opium	half a dram
Infusion of green tea	4 ounces.

All exposure to strong light, or other sources of irritation, as over-exercise, should be avoided. In very bad cases, I have sometimes scarified the insides of the eyelids, and even the white part of the eye itself, by means of the point of a fine lancet, with very great benefit.

In violent injuries of the eyes, such as blows, punctures of thorns, or scratches from cats, a similar treatment should be pursued, till the active inflammation has abated: after which, should any opacity of the cornea remain, that is, should a blueish dimness be left over the pupil, a small pinch of a powder may be sprinkled into the eye once or twice a day, composed of one scruple of sugar of lead, and one dram of calomel.

Cataract is another disease to which the eyes of dogs are liable. In the aged, cataracts are very common, from a breaking up of the strength of the parts: nor are they very uncommon in younger dogs, being sometimes the result of some outward injury, or apparent cause: at others the complaint is observed to come on gradually, as a slow chronic affection of the organ: but there is this difference between the disease in the old and the young, that, in the former, both the eyes commonly become affected; whereas, in the latter, it is usually confined to one only. In all these cases the before-described powder may be blown into the eye; but it is very seldom that any treatment arrests the final termination in blindness.

A dropsy of the eyeball now and then also occurs; in which case there is an extreme enlargement of the globe of the eye, and an imperfect contraction of the iris. I once punctured the sclerotic coat, and evacuated the water; but great in-

flammation followed, and the eye gradually wasted away. In other cases I have blown calomel into the eye, but without apparent benefit, except in one instance, where the owner grew tired of the trouble, and destroyed the dog before the precise effect could be ascertained. I have also tried electricity, setons, and blisters, but with no better success.

Eyelids, ulcerated.

THERE is now and then met with a mangy affection, confined to the eyelids, which is attended with ulceration, and a loss of hair. It may be generally removed by an ointment of the following kind:—

Ointment of nitrated quicksilver	1 dram
Superacetate of lead (<i>sugar of lead</i>)	20 grains
Spermaceti ointment	3 drams.

Anoint the parts, night and morning, lightly with this, watching the dog afterwards that he does not rub it into his eyes. Internal medicines will also assist the cure.—See **MANGE**.

Fatness, excessive.

THIS is a most common complaint among dogs. A proper plumpness of appearance denotes health; but when the animal oil, called fat, becomes inordinately disproportionate to the rest of the parts of the body, it proves a source of numerous diseases. The natural tendency of dogs to obesity is considerable; for any dog may be made fat by excessive feeding and little exercise. Provided the accumulation has been quick, the dog may be reduced to his former state without prejudice; but, when a dog gradually accumulates much fat from over-feeding and indulgence, then the obesity becomes so completely a disease, that even exercise and abstinence

will not always wholly reduce him; for the formation of the adipose substance is so habitual a work of the constitution, that, however little food the animal takes, short of starvation, that little is secreted into fat. That this is true may be known by the notorious fact, that many fat dogs eat but little.

There are two sources of fatness; one is, over-feeding; the other is, want of exercise: and when, as is very frequently the case, both causes happen to meet in the same subject, then the accumulation is certain. When dogs are over-fed, whatever is taken into the body, more than the general secretions require, is either converted into fat, or forms some other unusual secretion; as matter in the ears, in canker; or scabs on the skin, in mange.

Exercise increases all the usual secretions; hence, under strong exercise, more nutriment is required: and thus, in such cases, full feeding does not produce fat; but, even in full exercise, provided some of the usual secretions are stopped; though the others may be in full force; yet an over-accumulation of animal oil is apt to take place: thus spayed bitches and castrated dogs usually become fat, however they may work, because in them the sexual secretions are inert.

Fat more readily accumulates in middle aged and old dogs, than in the young; and the fat of old dogs is more hurtful to them than that of the young; the reason of which appears to be, that all aged animals have their fat placed more inwardly, while the younger ones have it placed more upon the surface of the body. A state of excessive fatness is an almost certain forerunner of asthma. It is also the parent of mange, canker, and other eruptive diseases; and not unfrequently it occasions fits, from the pressure it produces on the vessels of the head and chest. I have also seen an excessive accumulation of fat within the chest, particularly around the heart and large vessels, which has terminated by a rupture of one or the other of them.

Feeding of Dogs.

THIS is an important subject, as upon the judicious feeding of these animals much of their health and comfort depends ; and, by injudicious feeding, very many of their complaints are brought on. It is a curious fact, that the want of food, and the excess of it, should both produce the same disease. It is very seldom that a dog is badly fed for a considerable length of time, but that he contracts mange ; and it is also as seldom that a dog is long permitted to eat to excess, but that he also becomes mangy. However, if the same cleanliness and care were to be observed in both cases, the lean dog would have the least mange, and his would also prove much more easy of cure.

To feed judiciously, the physiology of digestion should be understood. All the juices of the body, and indeed all the solids likewise, are furnished from the blood. These juices are in a continual state of waste, and the solids are in a continual state of wear ; both of which (*i. e.* the waste and the wear) take place in proportion to the exertion used. There must, therefore, exist some means of recruiting this waste of the fluids, and some means of repairing this wear of the solids. Nature has intended that these ends should be brought about by food, consisting of solid and fluid substances taken into the mouth, which are there masticated and broken down into small masses by the teeth, and mixed into a paste with the saliva, by which it is rendered fit to be acted upon, after it has passed from the mouth into the stomach by the act of swallowing,

Being received into the stomach, it there meets with a strong solvent agent, called gastric juice ; by mixing with which it becomes animalized, and, in fact, wholly altered. In a complete pultaceous mass, called chyme, it is passed into the bowels, where there are little vessels that strain and suck up such fluid parts as are fitted for nourishing the body, and pass it forwards in very minute streams into glands, called

mesenteric. These glands empty their contents, then called chyle, into one common receptacle, from whence the chylous fluid is poured into the heart to form blood. The blood, therefore, is constantly recruited from this source; and from this description it will naturally suggest itself, that, when food is withheld, the blood must waste; and when this is the case, the fluids of the body must naturally decrease, and the solids must wear fast. On the contrary, when food is taken in too great quantities, the blood will, in that case, become too rich, and be generated in too large quantities; and, as the solids are limited in their growth, so some, or all the fluids of the body, will be formed from the superabundant blood in too large proportions. The moisture that goes to the skin will probably become acrid, and form a disease called mange: the sebaceous glands of the ear, instead of forming wax, will pour out blood or matter, then called canker; or the unnecessary quantity will flow to the teats, where, if it is not the time of pregnancy, it will form a spurious secretion and induration. When these evils do not immediately succeed, the superabundant blood expends itself in secreting an inordinate quantity of the oily fluid called fat.

It next becomes a question, What kind of food is the best for dogs? On observing this animal, either as a naturalist or as a physiologist, one is not at a moment's loss in determining that he is neither wholly carnivorous, nor wholly herbivorous, but of a mixed kind; intended to take in both foods, and formed to receive nourishment from either. He is furnished with sharp cutting teeth for tearing flesh, and he has also tolerably broad surfaces on other of his teeth, capable of grinding farinaceous substances. His stomach and intestines likewise hold a middle place between those of the carnivorous and herbivorous tribes. At the same time, the anatomical conformation of his teeth, and indeed of the whole of his digestive organs, appears rather more intended for flesh than herbage; his habits and partialities likewise tend that way. He is evidently a beast of prey, intended to live on other animals: the stronger he hunts in troops, the weaker

he conquers singly. Yet still it is clear that his organs fit him for receiving nutriment from vegetable matter also, and we see that he voluntarily seeks it.

It is not, therefore, difficult to determine that a mixture of both animal and vegetable substances is the most proper general food for dogs; but the proportions of each are best determined by the exertions of the body. For, as animal food affords most nutriment, so, when the bodily exertions are great, as in sporting dogs, then flesh is the best food. On the contrary, when bulk without much nutriment is required, as in dogs who are confined, then vegetable matter is best adapted to their wants. This subject appears to be one of very general interest; for no questions have been more frequently asked the author of these pages, than—What kind of food is the best for dogs, and what quantity of it? It is difficult to prescribe generally a precise quantity—some dogs require even naturally more than others; and, for the same reasons, it is not easy to give general directions with regard to the quality and kind also. If, however, the rationale of nutrition be attended to, and if the above reasoning on it be correct, there will be no difficulty in deciding when one or the other kind is proper, or when a mixture of animal and vegetable matter is to be preferred.

The inhabitants of cities and great towns often find it extremely inconvenient to obtain food for large dogs, particularly when there are many to feed. The following plan is peculiarly adapted for such situations; and, by this means, a wholesome, nutritious, and cheap food may be conveniently obtained. It consists of the tripe or paunches of sheep, which, being thoroughly cleaned, are to be boiled half an hour, or forty minutes, in a moderate quantity of water. When taken from the water, they should be hung up to cool, and the boiling liquor they came out of should be poured on bread raspings; those of French bread are the best. The quantity of raspings should be so regulated, that, when they are soaked and cold, the mess may be of the consistence of an ordinary pudding before boiling. The paunches being also cold, but not be-

fore, should be cut into fine pieces, and mixed with the soaked raspings. When raspings cannot be procured, meal or biscuit may be substituted. The mixture, it is evident, may be made to contain more or less animal matter, by increasing or lessening the proportion of paunch, or other kinds of meat may be substituted; but the author is disposed to think that tripe is, of all animal substances, the purest food, and tends least of all to make a dog foul and gross. When likewise it is intended, or wished, to make the mixture either more nutritious or more enticing, the offal or intestines of chickens and other fowl may be procured from the poulters, and boiled with the tripe. Of all substances in general use, except horse flesh, the entrails of chickens is that most eagerly sought after by dogs; and it is one which fattens them faster than any other. For the convenience of persons resident in London, it should be noticed, that the venders of ready dressed sheep heads sell the *trimmings* as dogs' food, and they form an excellent one.

Sportsmen in the country use various mixtures for food, and it is very often, in retired situations, a difficult matter to find proper substances for this purpose. In some kennels meal and milk are used, and dogs will thrive on them during the season they do not hunt; but, when they are strongly exercised, this food is not sufficiently nutritious. All the meals of wheat, barley, oats, and rye, are used for this purpose; but it is no difficult matter at once to decide, that wheat meal, when it can be procured, is to be preferred; for it is much less likely to produce mange and a heated skin than the others.

Barleymeal and oatmeal are most frequently given, and are each sufficiently nutritious when mixed with either milk or broth; but they have certainly some tendency to produce a red itching skin when constantly used; for which reason a portion of potatoes should be mixed with them. Potatoes, even without meal, will be found to form a good food for dogs who are not wanted for very active exertion: they are cooling, and, when mixed with milk or buttermilk, are suffi-

ciently nutritious for all common purposes, and form, in this way, an economical and wholesome food.

When circumstances render it absolutely necessary to feed principally on either barley or oatmeal, the heating effects may be also greatly obviated by mixing it with buttermilk. In all cases likewise of foulness, as mange, canker, &c., buttermilk will be found an excellent cleanser. When also it is necessary or convenient to feed upon potatoes, if they should not be relished, a small proportion of greaves or other fatty matter may be added, which will commonly render them sufficiently attractive.

In the feeding of favourites much error is frequently committed ; for, their *tastes* being consulted, they are too apt to be wholly fed on flesh, and this in great quantities too. In such cases, although the evil is acknowledged, yet it is alleged that the animals will not eat any other food. But it will be always in the power of those who feed them, to bring their dogs to live on vegetables entirely even : this however can only be effected, in some cases, by great determination and perseverance. If the usual quantity of meat a dog eats, be minced extremely fine, and a small portion of mashed potatoes be mixed with it, it is not possible for the dog to separate the animal from the vegetable portion : when presented to him, if he will not eat the mixture, let it remain until hunger obliges him to do it. At each meal, a very small additional quantity of potatoes may be added, and this practice, if persisted in, will bring the animal at last to live almost wholly on potatoes, or any other vegetable that may be selected. In a medical point of view, a vegetable diet is often very important. In many cases a complete change of food forms the very best *alterative* ; and, in others, it is a most excellent auxiliary to the medical treatment. The cases that require a change from an animal to a vegetable diet are frequent : all eruptive diseases, or other affections arising from too full living ; coughs likewise, and various inflammatory complaints, render this change essentially necessary to the health of the dog.

Carrots, parsnips, cabbages, and, indeed, all vegetable matter, will feed dogs sufficiently well for the purposes of existence. Damaged ship biscuit is often bought for the purpose of food, and it makes a very good one when soaked in broth or milk. It is, however, prudent here to introduce one very necessary caution, which is,—that the broth or liquor in which salted meat has been boiled should never be used for this purpose. Most dogs, who have been confined on ship board during a long voyage, contract an obstinate species of mange, wholly owing to their being fed on salt pot-liquor. This is not sufficiently attended to among sportsmen, and their servants are very apt to give the liquor in which salt pork and bacon have been boiled, with other brine, to the great injury of the animals.

Greaves are also, with many persons, a favourite, because they are a convenient food; and, when mixed with a sufficient quantity of vegetable matter, they form a hearty meal for large dogs, or such as live without doors, and are subjected to much exercise. I should, however, never make use of them myself, when any of the before-mentioned articles could be procured.

Many opinions prevail on the subject of horse flesh as food, its qualities being as strenuously supported by some, as they are condemned by others. The proper mode of considering the matter is to regard it as a strong and actively nutritious food, very fit for dogs who undergo great exercise; to such it never proves hurtful: but, where it is given to those who have little exercise, it proves too nutritious, and is apt to produce a foul stinking coat and itching skin. Much diversity of opinion prevails also as to whether it is better to be given raw or dressed. In a state of nature, it is evident that dogs live on raw meat, and there is no doubt that this best fits them for very active exercise, and enables them to perform all their functions with the most vigour and durability. Raw flesh of every kind appears particularly to increase the courage and ferocity; and where these qualities are requisite,

this mode of feeding will undoubtedly tend to increase them: such food is therefore proper for sporting dogs, for greyhounds, foxhounds, and harriers. When, therefore, raw meat, as horse flesh, can be procured sweet and fresh, it not only increases the animal ardour, but it will go the farthest of any in point of economy, by nourishing most. When it is at all putrid, dressing considerably restores it.

At what periods dogs ought to be fed is frequently likewise a matter of consideration, but which is easily and satisfactorily concluded upon, when considered in a similar point of view with the foregoing subjects. In a state of nature, even a daily meal among dogs must be very precarious; for, in some situations, vegetable food cannot be obtained, and then the hunting down of other animals, or the meeting with the offal or refuse of what may have been hunted by others, must be the principal support. For this reason, Nature has kindly and wisely fitted a dog with a stomach that digests his food, particularly of the animal kind, very slowly; so that a full meal of flesh is not digested in less than twenty-four hours. Those, therefore, who feed their dogs on animal matter never need feed them more than once a day; nor do dogs require to be fed oftener if meal be given, when fully fed on it. But it must be remembered that, under a life of confinement and art, where all the functions are weakened, as they must of necessity be in those dogs who are petted and indulged, it is better to feed them in smaller quantities twice a day. If fed once only, they become heavy and sleepy, and lose much of their vivacity. This may elicit an observation, that hard-worked dogs, as soon as fed, should be shut up, to encourage sleep. Digestion goes on better sleeping than waking; and more nutriment is obtained from the food in this way, than when an animal is suffered to run about after eating.

It may be also not improper to notice the unnecessary fear that many persons encourage relative to the giving of bones to dogs. Except by those of fish, or of the legs and wings of poultry, which, as being hollow, break into splinters, I

never remember having seen a dog injured by a bone; but I have great reason to think that the stomachs of these animals would be often benefited by the action of the bones: and also, that although the teeth are thought to be broken by them, and now and then (though but seldom) may be, yet that the evil is more than counterbalanced by the mechanical action of the bones cleaning away the tartar that otherwise accumulates around them.

Feet, sore.

WHEN the feet of dogs become sore by travelling, it is common to wash them with brine; but this is not altogether a good practice. It is better to bathe them with greasy pot-liquor, milk, or buttermilk, and afterwards to defend them from stones and dirt, by wrapping them up. When the feet become sore from any diseased affection of the *claws*, the proper treatment may be seen under that head.

Fever.

SIMPLE fever seldom, if ever, exists in dogs. Inflammations of the principal organs of the body, as of the lungs, intestines, kidneys, bladder, &c., are very common: but pure fever does not occur, except of the specific kind, as the fever of distemper, and the fever of rabies, &c. &c.

Fits.

THE fits that usually appear in dogs, though not very different in appearance from each other, arise from very different causes, and, therefore, require very different treatment.

The epileptic fits that attack dogs of all ages, otherwise apparently healthy, may be idiopathic, or they may arise from distemper, costiveness, or worms, &c. In countries where there are lead mines, dogs have often violent epileptic fits, from the effects of the lead on the water. The oxen, sheep, goats, and horses, of such situations, also participate. Mercury appears to form the best antidote for these contractions, either rubbed externally or given internally.

In the treatment of epilepsy, it is evident that the cause producing the attacks must be attended to, to effect a cure. The immediate fit itself may be removed at once usually, by plunging the dog into cold water; or sprinkling it in his face even, is sufficient in many cases. Whenever a fit has happened to a healthy dog, he should immediately have a brisk purge given him, for fits are very frequently brought on by simple costiveness: and even if such were not the case previous to the fit, this treatment would be the most proper. Should it be at all suspected that the affection arose from worms, treat as directed under that head. Some dogs are so irritable, that whatever raises any strong passion in their minds produces an epileptic attack: hence dogs much confined, on being suffered to run out, frequently have a fit. It is this irritability in the mind, likewise, that produces fits in pointers and setters when hunting; for they are observed more frequent in the high-bred and eager, than in the cool coarse dog. As a general rule, in these cases, regular exercise must be given; and, in sporting dogs of high breed or delicate forms, the constitution of body should as much as possible be strengthened, by good food, pure air, and freedom from confinement; for fits are here the effect of too much energy of the mind, beyond the powers of the body: and in all such cases they are, probably, the effect of a peculiar debility. The irritability of the mind itself should also be attempted to be moderated: in sporting dogs, it is best done by habituating them to the sight of much game, which greatly lessens their eagerness. For a very valuable dog, belonging to a gentleman in Kent, affected with epilepsy

whenever he hunted, I recommended a removal into a country more plentifully supplied with game than his neighbourhood afforded; the consequence of which was, that though, for a few days after his removal, he had fits more frequently than ever, yet they gradually lessened, and at length wholly left him. Some dogs however, and particularly fat ones who exercise much, have fits merely from the repletion of the vessels of the head: in these cases, bleeding, an occasional purgative, and a seton worn some time in the neck, prove useful. It may be added, that whenever fits have become habitual, a seton should be made at the back of the neck, and kept open some months. Fear in irritable dogs produces fits, of which I have seen innumerable instances, and have already noticed some of them.

A very distressing and dangerous kind of epileptic fits sometimes attacks bitches while suckling. In these cases it arises from the owners being anxious to rear too many puppies, by which they burthen the mother beyond her powers: the consequence is an attack of convulsions, which frequently destroys the animal.—See PUPPING.—Teething in puppies will sometimes produce fits; but some sportsmen, aware of this, fall into another extreme, and consider all the fits of young dogs to originate from this cause; when by far the greater number of these attacks are the effect of worms, or the precursors of distemper.

The fits that are the consequence of distemper, may be usually discovered by the other attendant symptoms: sometimes, however, a fit is the very first symptom, in which case it is remarkable, that it often augurs nothing unfavourable: but when a fit comes on some time after distemper has made its appearance, the animal seldom recovers. The convulsions accompanying distemper are more frequent in winter than in summer, which shews that warmth is one of the best preventives against these attacks. This species of epilepsy usually commences its attack on the head, beginning with the muscles of the face and jaws, producing a quick champing of the mouth, with a shaking of the head, a distortion of the

countenance, and a flow of frothy saliva from the jaws; each succeeding fit becoming stronger and more violent. Another form in which these fits make their appearance in distemper, is, by a continual running round, commonly to one side only, with other violent contortions of the whole body. In other instances, there is present universal and continued spasm of the whole of the external muscles, very much resembling St. Vitus's dance. All these varieties are sometimes blended, or they occasionally degenerate into each other.

The idiopathic epilepsy, or those fits which appear habitual, and not dependent on any temporary cause, as costiveness, worms, distemper, &c., are, in general, very difficult of cure. In dogs of very full habit, bleeding, emetics, and an occasional purge, should all be premised. In others, the following medicines may be at once proceeded on:—

Submuriate of quicksilver (<i>calomel</i>)	12 grains
Powdered foxglove	12 grains
Powdered mistletoe	2 drams.

Mix, and divide into nine, twelve, or fifteen parcels, according to the size of the dog, and give one every morning. After these have been fully tried, in case the attacks do not relax, try the following:—

Nitrate of silver (<i>lunar caustic</i>), finely powdered	2 grains
Spiders' web, called cobweb	5 grains
Conserve of roses	

sufficient to make nine, twelve, or fifteen bales, according to the size of the dog; of which give one every morning.



Fleas in Dogs.

AMONG the numerous inconveniences to which the canine race are liable, I hardly know one more troublesome to themselves, or vexatious to their owners, than this common one of fleas. It becomes, therefore, a very frequent inquiry—How they can be destroyed, or how they can be prevented from

accumulating?—Washing the body well with soap-suds, and directly afterwards carefully combing it with a small-toothed comb, are the most ready means of dislodging these nimble gentry. But it must be remembered, that the previous washing is only to enable the comb more readily to overtake them: the water does not destroy them; for dogs, who swim every day, are still found to have fleas. These insects are very tenacious of life, and soon recover this temporary drowning; the comb, therefore, is principally to be depended on for their capture before they recover. But as washing is not, in many instances, a salutary practice, and as, in many others, it is a very inconvenient one, so it becomes a matter worthy of consideration how to be enabled to destroy them without these means.

Sopping the skin with tobacco water has been recommended; but it has only a momentary effect, and it not unfrequently poisons the dog.—See MANGE.—Innumerable other means I have tried to *drive away* fleas, but the only tolerable certain one I have discovered, is to make dogs sleep on fresh yellow deal shavings. These shavings may be made so fine as to be as soft as a feather bed; and, if changed every week or fortnight, they make the most cleanly and wholesome one that a dog can sleep on. But, where this is absolutely impracticable, it will be found useful to rub or dredge the dog's hide, once or twice a week, with very finely powdered rosin; if simply rubbed in, add some bran. Fleas are not only troublesome, but, by the irritation they occasion, they produce a tendency to mange.



Fractures.

THE limbs of dogs are very liable to become fractured; but the irritability of the constitution is so much less in these animals than in ourselves, that they suffer comparatively but little on these occasions; and the parts soon reinstate themselves, even without assistance, though in such cases the

limb in general remains crooked. The thigh is a very common subject of fracture; and though it appears a most serious bone to break, yet it is one that, with a little assistance, commonly unites straight, and forms a good limb. When a fracture has happened to the *thigh*, in case the violence has injured the fleshy parts also, so as to produce tension, heat, and inflammation, foment with vinegar and water till the swelling is reduced. When this is effected, apply a plaster of pitch or other adhesive matter, spread on moderately firm leather, sufficiently large to cover the outside of the thigh, and to double a little over the inside of it also. Then attach a long splent upon this, which, if it reach from the toes to an inch or two above the back, will be found to steady the limb very much. This splent must be kept in its situation by a long bandage carefully wound round the limb, beginning at the toes, and continuing it up the thigh; when it must be crossed over the back, continued down around the other thigh, and then fastened. This would, however, slip over the tail, without other assistance; for which reason it must be kept in its place by means of another slip passed round the neck and along the back.

Fractures of the *shoulder* should be treated in a similar manner.

In fractures of the *fore and hind legs*, very great care is necessary to insure a straight union. As soon as the inflammation and swelling will admit of it (sometimes there is little or none from the first), apply an adhesive plaster neatly and firmly around the part; then fill up the inequalities by tow or lint, so that the limb shall appear of one size throughout, otherwise the points of the joints will be irritated and made sore by the pressure of the splents. After this has been done, apply two, three, or four splents of thin pliable wood before, behind, and on each side of the limb, and secure them in their places by a flannel bandage. In all fractures, great caution must be observed not to tighten the part, by either the plaster or bandage, so as to bring on swelling; for, when this has been done, mortification has followed. In fractures of the

fore legs, a supporting bandage, with side splints, should be kept on a longer time than is necessary for fractures of the hinder ones. If this precaution be not observed, the leg is apt to become gradually crooked, after the apparatus is removed.

In cases of compound fracture, that is, where there is an open wound, which penetrates to the divided bones; the same means must be pursued as are practised in the human subject. Irritating pointed portions must be sawed off; the loose ones should be removed; and every means must be used to close the wound as early as possible: during which process, the bones should be kept in contact with each other, and supported by soft bandages; until the cicatrization of the wound will allow of proper splints and tighter bandaging.

It likewise not unfrequently happens, that a compound fracture, or even a simple one, when neglected, becomes united by a soft union; that is, instead of the callus interposed between the divided ends being bony, it proves cartilaginous only. In such a case the fractured limb never becomes firm; but, on the contrary, when examined, an obscure motion may be felt, like an imperfect joint, which utterly precludes any strength in the limb. I have frequently been consulted on these cases, all of which have originated in the neglect of a proper treatment at first.

As a remedy for the evil, one of two practices must be pursued. We should either open the skin opposite the fracture, and, laying bare the bone, we should remove the soft portion interposed: with a fine saw, treating the case afterwards as a compound fracture. Or we should insert a seton exactly through the soft cartilaginous portion, and keep it open ten days or a fortnight. After this time it may be removed, the wound closed, and the part treated as a simple fracture. Either of these plans will usually prove successful, and firmly consolidate the limb: but, when there is no lapping over of the ends of the bones, the latter is the most mild and convenient, and equally certain of success.

Gastritis.

See INFLAMED STOMACH.

Glandular Swellings.

Dogs are very liable to glandular swellings of various parts of the body. The glands, however, most subject to become affected, are those of the neck and belly. The former complaint is treated of under the head BRONCHOCELE. The glands of the belly are very frequently tumefied in bitches.—See SCHIRRUS.—Puppies, now and then, have their mesenteric glands enlarged and diseased; in which cases they pine and waste away, till complete emaciation carries them off.—See PUPPIES.—The pancreas and spleen also are liable, occasionally, to become diseased.

There is sometimes an enlargement of the whole of the substance of the neck that is apt to be confounded with glandular swelling, but which it is wholly different from; depending entirely on a spasmotic and rheumatic affection.—See RHEUMATISM.

Gravel.

Dogs have stone it is certain; that they therefore have gravel also, it is natural to suppose, though it is not always easy to detect it. I have, however, seen the complaint sufficiently well marked. From ten to twenty drops of oil of turpentine, or twice the quantity of spirits of nitrous æther (*spirit of nitre*), twice a day, with a few drops of laudanum added to either in case of much pain, will form the best means of relief.—See the article STONE.

Hæmorrhage, or Blood-flowing.

See ASTRINGENTS.

Hæmorrhoids.

See PILES.

Head, swelled.

See MANGE, ACUTE.

Heat in Bitches.

See BREEDING.

Hepatitis.

See INFLAMED LIVER.

Hernia.

DOGS now and then have hernia: very fat dogs are more liable than others to a protrusion of the omentum through either the abdominal ring, the umbilicus, or through an accidental opening between the abdominal parieties; but as these hernias are usually irreducible, and seldom become strangulated, so no rules are necessary for their treatment.

Husk.

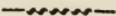
THIS is the popular term, in some countries, for distemper; it is also in some others the common name for any cough a dog may have. In Ireland it commonly implies distemper.

*Hydrophobia.*

As dogs never refuse water when rabid, or *mad*, as it is called, or ever shew the least aversion to it; but, on the contrary, are even eager to lap it, from the feverish thirst they feel; so it is evident that this term is a complete misnomer with regard to the rabid malady. The reader is, therefore, referred to the article RABIES for a description of the complaint.

*Inflammation.*

GENERAL inflammation, as simple fever, it has been stated, does not often appear in dogs; but topical inflammation of the various organs of the body is of very frequent occurrence.

*Inflamed Bladder (*Cystitis*).*

THIS is not a very common complaint among dogs, nevertheless it now and then occurs: in the year 1810 there was an epidemic prevalent, in which the bladder was in every instance very much inflamed; and in many of the cases which occurred it was exclusively so. *Cystitis*, or inflammation of the bladder, shews itself by a very frequent pulse, great restlessness, and panting: in some instances the urine is evacuated by frequent drops, tinged with blood; in others there

is a total stoppage of it. The belly appears hot, swelled, and is very tender to the touch, particularly between the hind legs.

The animal affected should be liberally bled, and have opening medicines; clysters and the warm bath are also to be resorted to, and frequently repeated. Diuretics are improper, but antimonials, as antimonial or James's Powder, or small repeated doses of emetic tartar, are by no means to be neglected. Where the warm bath is not convenient, warm fomentations may be properly substituted. Leeches may also be applied.

Inflamed Bowels (Enteritis).

THE intestines of dogs are very irritable, and extremely subject to inflammation; and the inflammations affecting them are of various kinds, according to the operating cause. Distemper occasions a species of inflammation, that shews itself by a continued diarrhoea. Dogs are very liable to rheumatism; but it is no less true than curious, that a dog never has acute, and seldom chronic rheumatism either, that is not accompanied more or less with inflammation of his bowels: this connection is, however, peculiar to the dog alone. In many cases the bowels are the immediate and principal seat of the rheumatism, which is productive of a peculiar inflammation, easily distinguished by those conversant with the diseases of dogs; and further noticed below. Poisons produce a most fatal inflammation in the bowels of dogs; the effects of which are treated on under the head Poisons.

Among the various inflammatory affections, four kinds are peculiarly common to the intestines of dogs.

The *first* is that which is brought on by rheumatism, as already explained.—See RHEUMATISM.

Inflamed Bowels, from Costiveness, forms the *second* kind, and is a very common occurrence. Dogs will bear costiveness for many days before inflammation comes on; but,

when it has commenced, it is not easily removed. This kind is known by the gradual manner in which it attacks, and by its being at first unaccompanied by any very active symptoms. The dog appears dull, dislikes to move, and hides himself; his belly is hot, and sore also. The costiveness is sometimes so complete, that nothing at all comes from him; at others a few drops of foeces are strained out at every effort, which is apt to make the observer suppose that the dog is not bound, but, on the contrary, purged; he is, therefore, led to neglect the principal means of relief.

In the inflammation arising from costiveness, the sickness of stomach is not at first so distressing; nor is the dog so extremely anxious for water, as he is when it arises from a cold taken, or when it comes on spontaneously. The obstruction that exists, is commonly situated far back in the larger bowels, so that, by introducing the finger into the fundament, a quantity of hardened excrement may frequently be felt. This occurs so often, that, whenever costiveness is even suspected, the dog should be examined, by passing the fore finger up the anus.

Obstructions may, however, exist in any portion of the intestinal track. I have in my possession an obstructed jejunum; in the centre of which intestine is a cork, that had been brutally forced down the throat. Needles and pins form fatal obstructions sometimes, by getting across the bowels. I have also known a splinter of a chicken bone imbed itself in the substance of one of the intestines, and form an insurmountable obstruction. Intussusception also now and then occurs, in which one portion of bowel gets folded within another from spasm, and thus forms a complete stoppage to the passage of the foeces.

Whenever we can ascertain, by the anus, that the obstruction consists of a simple accumulation of hardened excrement within the rectum, it is evident that purging medicines by the mouth can do little good, but may do a great deal of harm, by forcing the obstructed contents into a more solid mass.

The hardened matter should be carefully broken and separated by the finger, or by a forceps, or handle of a spoon; and it may then be brought away piecemeal. If this cannot be effected, or the obstruction be situated completely without the reach, clysters should be constantly kept up the intestines; that is, as soon as one comes away another ought to be thrown up. The dog should also be put into a warm bath frequently, which often proves the most effectual means of removing obstinate costiveness. Medicines by the mouth are not to be neglected, particularly where the obstruction does not exist within the reach of the finger; on the contrary, a large dose of castor oil may be first tried, which, if it fails to open the bowels, should give place to stronger means. From three to six or eight grains of calomel may be mixed with from half a dram to one or two drams of aloes, according to the size and strength of the dog. If the stomach should reject the first dose, add a quarter of a grain of opium to the second: or, a dose of Epsom salts, dissolved in broth, may be tried. Fortunately for medicine, we have now a purgative so subtle and minute, that even a drop put on the tongue acts as a powerful laxative. The *croton oil*, I am informed, by Mr. YOUATT, acts as powerfully on dogs as on the human subject, and therefore in these cases should be tried. Repeat the purge, whatever it may be, every three or four hours, until it operates.

In the *third* inflammation (ENTERITIS), or that which comes on spontaneously from irritation or from the effect of cold, the early symptoms are more acute; great heat, thirst, panting, and restlessness, are apparent even from the first attack. The stomach is incessantly sick, and throws off all its contents, mixed oftentimes with biliary matter, and all food is refused, but water is sometimes sought for with anxiety. The belly is extremely hot, and painful to the touch; the eyes are red, and the mouth and nose are alternately hot and cold. The animal frequently lies on his stomach, expresses great anxiety in his countenance, and the pulse is extremely

quick but small. Enteritis may be distinguished from spasmodic colic by the extreme tenderness and heat in the bowels, which are not so apparent in the inflammatory.

Under these circumstances, the dog should be early and freely bled. From three to six or eight ounces may be taken away, according to the size and strength of the patient. A laxative of castor oil, or of Epsom salts, should be administered; but unless the bowels are obstinately bound, and have been so for several days, nothing drastic should be given by the mouth, as it would only heighten the inflammatory symptoms. The animal should be bathed in warm water every three or four hours: when that is found too troublesome, from his size or other circumstances, the belly may be rubbed with hot water, or fomented with hot flannels; but one or the other must by no means be omitted. Clysters of castor oil, with mutton broth, should be frequently thrown up, till evacuation is procured; and, when the case is desperate, the belly may also be rubbed with oil of turpentine between the bathings, or covered with a blister; or a mustard poultice may be applied. No food should be given, and cold water should be removed; but the dog may be drenched with mutton broth. In case the vomiting continues obstinate, with every dose of castor oil, and with every drench of mutton broth, give from ten to twenty drops of laudanum. In these cases, when the animal becomes paralytic in his lower extremities, when the sickness proves incessant, and the mouth and ears become cold and pale, mortification is at hand. This kind of inflammation is not always accompanied with costiveness; in some there is very little; and in a few cases the bowels are even lax. But, in the greater number of instances, costiveness to a certain degree is present; for, even when it does not exist previous to the attack, it is pretty sure to be brought on by it. An effectual laxative is, therefore, premised early in the complaint. If the dog is very delicate, this primary laxative may be castor oil; but when that is not at hand, or fails in its operation, I have used mild doses of Epsom salts with advan-

tage ; and, in some instances, these have remained on the stomach, when castor oil has been rejected.—See COSTIVENESS.

Bilious Inflammation of the Bowels forms the fourth kind of these intestinal affections before noticed. I have already remarked, that dogs, in common with all animals that live indiscriminately on animal and vegetable matters, are subject to a disordered state of the liver, and to a vitiated secretion of its biliary fluid.

This bilious inflammation of the bowels, I suspect, originates primarily from some affection of the liver, which alters its secreting qualities, and makes it, instead of engendering a healthy bile, secrete one of a black noxious kind ; which, as soon as it passes into the bowels, irritates and inflames them most highly. This species of intestinal inflammation may be distinguished from the other kinds, by the early vomiting of a black or yellow foetid matter, and likewise by the bilious matters evident in the purgings. Poisonous substances will, however, sometimes produce similar appearances in the stools ; great caution is therefore requisite in deciding between the two, as the treatment for the one, and that for the other (see POISONS), should be very different. In the inflammations arising from mineral poisons, the vomitings are incessant, and usually frothy and streaked with blood ; the mouth swells, and emits an offensive odour ; and the stools are more bloody and less tinged with dark bile. This inflammation may be distinguished from the bilious by the thirst, which is insatiable under the action of poison.

Bilious inflammation is not a very untractable complaint, when judiciously managed. When the purgings are already considerable, nothing stronger than castor oil should be given ; but this should never be neglected, unless the evacuations are extremely frequent, profuse, and bloody. When the evacuations by the bowels are very trifling, a mild mercurial purge even should not be neglected, which I have sometimes found of the greatest service ; as,

Submuriate of quicksilver (<i>calomel</i>)	10 grains
Aloes	3 drams
Opium	quarter of a grain.

Make into four, six, or eight balls, according to the size of the dog, and give one every four or five hours till relief is obtained. It will be prudent to give elysters of mutton broth; broth may also be forced down the throat: and when the sickness is very obstinate, add ten drops of laudanum. The warm bath, or fomentations, should be likewise made use of, in case the belly feels hot and tense.

It will, however, frequently happen that the evacuations from the bowels are, from the irritating quality of the bile, profuse before the disease is at all attended to; and in addition to the quantity evacuated, the stools, in some of these cases, are found to be tinged with blood. Here no laxatives should be used, but, on the contrary, the following should be given:—

Powdered colombo	1 dram
Powdered chalk.....	1 dram
Powdered gum arabic.....	1 dram
Powdered opium	1 grain.

Mix, and divide into three, five, or seven balls, according to the size of the dog, and give one every three or four hours. In addition to this, a starch elyster may also be given, if the case is desperate. The distressing sickness that sometimes accompanies these aggravated cases, and the bloody evacuations, likewise render it very difficult to distinguish them from those that occur from the administration of mineral poisons, without a minute attention to circumstances already detailed. The sickness is, however, best relieved in all of them by the powder of colombo, given in moderate but frequent doses, as from ten to fifteen grains.

Inflamed Liver (Hepatitis).

THE hepatic organ in dogs is subject to two inflammations; one rapid and acute, the other slow and chronic.

Acute Inflammation of the Liver is not a very frequent disease, but I have several times met with it. It may be brought on by cold, and shews itself by dulness, restlessness, panting, and unusual inclination to drink. There is also present, in some cases, frequent sickness; but which is seldom of that distressing kind which accompanies inflammation of the stomach or bowels. Hepatitis may be distinguished from peripneumony, or inflamed lungs, by the absence of an intense coldness of the nose and mouth; neither is there a watery exudation from them, as in pneumonia; nor is the head held up to facilitate breathing. From inflamed bowels it may be distinguished, by the general symptoms being, although not dissimilar, yet less severe, with less prostration of strength; neither is the region of the belly so hot and tense, although I have observed the right side considerably enlarged and tender to the touch in some cases. On the second day of the inflammation, the urine becomes of a deep yellow: the skin becomes likewise universally tinged, but the coverings of the eyes and mouth particularly so.

This disease is sometimes attended with purging, but much oftener with constipation. When active purging is present, the complaint usually degenerates into the bilious, or *fourth kind* of inflammation of the bowels.—See INFLAMED BOWELS. Hepatitis, or inflamed liver, is commonly fatal, unless attended to sufficiently early. When the sickness becomes frequent, when the limbs appear paralytic, and the mouth is pale as well as cold, a fatal termination may be expected.

The proper treatment of the complaint consists in early and plentiful bleeding. A stimulating or blistering application should be applied to the belly, particularly towards the right side. A moderate purge should also be administered; and, if circumstances should prevent the application of any

stimulant to the region of the liver, the dog should be put into warm water twice or thrice during the day. After the purge has operated, give the following every three or four hours:—

Powdered foxglove	8 grains
Antimonial powder	16 grains
Nitrated potash (<i>nitre</i>) in powder.....	1 dram.

Mix, and divide into seven, nine, or twelve powders; or make into as many balls, according to the size of the dog. If amendment does not become apparent, repeat the bleeding, and stimulate the skin more actively.

Chronic Inflammation of the Liver arises sometimes spontaneously, and is idiopathic. In other cases it is brought on by the agency of other affections. Long continued or inverted mange will tend to produce disease in the liver. In some cases of distemper, also, a dull inflammatory action of the liver occurs, and which is almost always accompanied with a pustular eruption over the belly. The skin is also commonly tinged with a biliary suffusion, but the urine is invariably impregnated with a very large quantity of bile.

This complaint produces dulness, wasting, a staring coat, and very often a tumour may be felt in the right side of the belly. From the unhealthy appearance of the hair, it is often mistaken for worms; but it may be distinguished from that complaint by the want of the voracity of appetite which characterises worms, and also by the general and constant dulness of manner.

The treatment of this disease should be commenced by a mercurial purge, after which give, night and morning, one of the following balls:—

Submuriate of quicksilver (<i>calomel</i>).....	20 grains
Antimonial powder	30 grains
Powdered myrrh	2 drams
Powdered gentian	2 drams
Aloes	2 drams.

Mix with any adhesive matter, and divide into fifteen, twenty, or twenty-five balls, according to the size of the dog.

Mercurial ointment.....	1 ounce
Blistering ointment.....	2 drams
Ointment of yellow wax.....	1 ounce.

Rub into the region of the liver a small portion of this ointment (the size of a nutmeg) once every day. Pursue this treatment some time, carefully watching the mouth, to guard against sudden and violent salivation. A moderate soreness of the mouth is, however, to be encouraged and kept up: nor have I ever succeeded in removing the complaint without it.

Inflamed Lungs (Peripneumonia).

PNEUMONIA is not an unfrequent complaint among dogs. In some years it is remarkable that it rages in an epidemic form, and destroys vast numbers. In general cases it may, however, be directly traced to the action of cold on the body. I have seen it brought on, in a great number of instances, by the cruel practice of clipping or shearing rough dogs in cold weather. Throwing dogs into the water, and afterwards neglecting to dry them, is also not an uncommon cause of it. In fact, any unusual exposure to cold may occasion it. In some instances it is brought on by distemper.

The complaint is commonly rapid, and usually fatal; its fatal tendency being much increased by the circumstance, that in most instances it arrives at such a height, before it attracts sufficient notice, as to baffle all attempts at reducing the inflammation. During one of the periods in which it raged in an epidemic form (a warm mild spring), hardly any dog survived beyond the third day; about which time most of the affected were suffocated by the quantity of water formed within the chest. A serous effusion, although a frequent, is not an invariable termination of the complaint. I have seen it destroy by a congestion of blood within the lungs.

It now and then, when attended to very early, terminates likewise by resolution and returning health.

Inflammation of the lungs shews itself by a very quick laborious breathing; the heart beats in a very rapid but oppressed manner. The head is held up to enable the dog to breathe more freely, and which peculiar posture very strongly characterises the complaint. In almost every instance also considerable moisture distils from the nose; which, together with the ears and paws, are in general extremely and unnaturally cold. A short quick cough is often present, but this is not invariably the case.

The *cure* should be begun by bleeding, and that very largely; but it must be particularly remembered that bleeding ought only to be attempted early in the complaint: if it is performed after the second day, the dog commonly dies under the operation. This circumstance should never be forgotten by a practitioner who may happen to be called in, the recollection of which may save him much mortification and disgrace. The first bleeding, if early attempted, may save, provided it is a full and copious one. For every pound a dog weighs, as far as eight pounds, he may lose half an ounce of blood. From that weight upwards, he may lose a quarter of an ounce for every pound, unless it should be a very large heavy dog, when the proportion must be moderated. The whole chest should likewise be immediately blistered between the fore legs, and behind the elbows, by removing the hair, and afterwards rubbing in a blistering ointment, and then covering the parts with a cloth carefully secured. If blistering ointment is not at hand, oil of turpentine, well rubbed in, and repeated at intervals of two or three hours, will do nearly as well. A clyster should also be given, and no time should be lost in administering the following by the mouth likewise:—

Powdered foxglove	12 grains
Tartar emetic.....	3 grains
Nitre.....	1 dram.

Mix, and divide into six, nine, or twelve powders, or form into balls, and give one every two or three hours. But if there should be much cough present, then substitute the following:—

Tincture of foxglove.....	1 dram
Tartarised antimony (<i>tartar emetic</i>).....	3 grains
Nitrated potash (<i>nitre</i>).....	1 dram
Oxymel.....	2 ounces.

Give from a tea to a dessert-spoonful of this mixture every two or three hours. If either of these medicines acts as a vomit on the dog, moderate the dose.

In this complaint it is peculiarly requisite to keep the dog in a cool temperature. Provided his skin is screened from the access of cold, it is no matter how cool the air he breathes. If amendment should not be apparent in four hours, the bleeding may be repeated, and the blistering likewise. But if, in spite of these renewed applications, the nose and mouth continue intensely cold, and the head remains held as high, or even higher, than before, a fatal termination may be expected *.

Inflamed Stomach (Gastritis).

THE stomach is less frequently affected with idiopathic inflammation than the bowels; it is, however, now and then the seat of primary inflammation, and it often becomes inflammatorily affected when the bowels are so. When the stomach is primarily inflamed, the sickness is incessant and most distressing; the thirst is unquenchable, and whatever is taken in, is immediately thrown up again. There is also very

* I would submit to the veterinarian the propriety of performing, in particular pneumonic cases, the operation for empyema as a last resource. The evacuation of the serum, which is commonly thrown into the chest, might arrest the fatal termination: at least, the experiment would be worth the trial.

great distress in the countenance, but the dog evinces less disposition to hide himself than in simple bowel affection. The mouth slavers, and is hot and cold by turns.

Gastritis, when violent, is seldom relieved, even by any treatment. When it does admit of cure, it is done by bleeding early and largely, both by the neck, and by leeches to the region of the stomach. The warm bath should be used, and injections should be repeatedly administered. The chest should be blistered also, but nothing ought to be given by the mouth.

The stomach is also liable to become inflamed from poisonous substances. The medical treatment of such cases is detailed under the head POISONS.

Jaundice.

Dogs now and then become affected with hepatic absorption, in distemper and acute inflammations of the abdominal viscera; but that icteric obstruction to the flow of bile producing human jaundice I have not met with in them.

Looseness, or Purging (Diarrhœa).

Dogs are very subject, under various circumstances, to *diarrhœa*. It is seldom that they are affected with the *Distemper* without having a morbid alvine flux also, and which, when obstinate and violent, is one of the most fatal accompaniments the disease can have. In the distemper, the colour and consistence of the loose stools vary much; sometimes the motions are glairy or mucus-like, often frothy and pale; at others totally black: but, when the purging has lasted some time, they invariably become yellow. Another common cause of purging among dogs arises from worms; in which

cases, the stools are less liquid, but more glairy and frothy : the state of the bowels varies also from day to day, being at one time loose, and at another costive.

When diarrhœa continues for many days, the rectum becomes inflamed and slightly ulcerated within the fundament, by which a constant irritation and tenesmus are kept up ; and the poor animal, feeling as though he wanted to evacuate, is continually trying to bring something away. On observing this, persons are frequently led into error ; for, under a supposition that there exists actual costiveness at the time, they give purging medicines, which greatly aggravate the complaint, and frequently destroy the dog. When the diarrhœa is considerable, there is always violent thirst, and cold water is sought after with great eagerness ; but which increases the evil, and, therefore, should be removed, and broth or rice-water should be substituted in its room. When diarrhœa has continued many days, particularly in the malignant distemper, it often takes on something of a dysenteric appearance, from the mucous surface of the intestines becoming inflamed, and throwing off their mucous secretion in great quantities with every motion.

The *curé of diarrhœa* must depend on the light in which we are led to consider it ; whether as a disease of itself, or as merely the symptom of some other existing disease. For instance, *a biliary purging*, which comes on suddenly with violent vomiting, is best removed by evacuants to carry off the vitiated bile from the bowels. In the looseness occasioned by worms also, purgatives or other vermisfuges should be made use of to remove the cause, and not astringents, which would merely apply to the effect. But when diarrhœa appears an idiopathic affection, that is, as a diseased action of the bowels themselves, and also when it is produced by distemper, it should in either case be immediately checked, or it may produce such weakness and emaciation as will destroy the dog. In the distemper it is particularly necessary to check the looseness very early ; for when it is continued beyond the third or fourth day, its invariable effect is to destroy

the appetite, after which, of course, the weakness increases in a double degree.

The remedies employed, when diarrhoea is a primary complaint, are generally either of an absorbent or an astringent nature: but a long experience enables me to state that the loosenesses or scourings of dogs are best combated by a proper mixture of both these. In the purging which accompanies distemper, however, the disease frequently proves very obstinate, and even baffles every endeavour to remove it. Suet, boiled in milk, has been long a favourite domestic remedy, and in slight cases is equal to the cure. Alum-whey has also proved useful, but more frequently as an injection, than by the mouth. Great benefit has also been experienced from an infusion of the inner rind of the barberry, particularly when the evacuations have been glairy and mucus-like. In cases where there has been an appearance of much bile in the stools, and the dog has been strong, I have found it prudent sometimes to premise an emetic of ipecacuanha, after which either of the following recipes may be used with advantage. In point of efficacy they are to be ranked, according to my experience, in the order in which they stand.

No. 1.—Catechu, powdered	1 dram
Gum arabic, powdered	1 dram
Prepared chalk.....	2 drams.

Make into balls, with conserve of roses, and give, from the size of a hazelnut to that of a small walnut, two or three times a day, according to the urgency of the symptoms, &c. &c.

No. 2.—Powdered rhubarb.....	half a dram
Powdered ipecacuanha.....	1 scruple
Powdered opium.....	3 grains
Prepared chalk.....	2 drams.

Mix, prepare, and give, as above.

No. 3.—Magnesia	2 drams
Powdered alum	1 scruple
Powdered colombo	1 dram.

Mix, with six ounces of boiled starch, and give a dessert or a

table-spoonful every four, six, or eight hours. In very obstinate cases try the following:—

No. 4.—Powdered ipecacuanha	1 dram
Powdered opium	4 grains
Powdered starch	2 drams
Conserve of roses	

sufficient to form into four, six, or eight balls, according to the size of the dog, of which give one every two or three hours. In such cases, also, powdered resin has now and then done good, giving half a dram every three or four hours in broth.

It is necessary to be aware that the action of astringents is varied and uncertain. In one case one remedy only will prove successful, and in another a very different one will alone do good. But in the looseness that accompanies distemper, it may be observed as a general rule, that absorbent astringents succeed best. In some very desperate cases of diarrhoea, when all other means have failed, I have derived great benefit from astringent clysters; and this so frequently, that I would, in all such cases, strongly recommend their adoption. From the benefit that is frequently experienced from their use; and from the tenesmus, and appearance of the stools, in which a drop or two of blood is squeezed out at last, I am strongly inclined to think that the rectum, or sometimes the colon, is, in many cases, the principal seat of the complaint.

Astringent clysters may be composed of alum whey, which is nothing more than milk curdled with alum. Suet, boiled in milk, is also an excellent clyster for the purpose. Boiled starch is likewise a valuable astringent clyster, and, perhaps, is the very best that can be used, if the powder No. 1 be added to it. In diarrhoea, it is of the greatest consequence that the strength should be supported by liberal but judicious feeding; and it must not be forgotten that, when the appetite ceases, starch, with gravy, should be forced down in small quantities, but often. The animals affected with this complaint should be kept very quiet and warm, both which

parts of the treatment must be carefully attended to. In some instances I have witnessed the good effects of a daily warm bath. I have also observed, where the diarrhoea of distemper has existed in a dog who had been before closely confined, that removing him into a more free and pure atmosphere has tended greatly to check the disease.

Lumbago.

See RHEUMATISM.

Lungs, inflamed.

See INFLAMED LUNGS.

Madness.

THE *rabid malady* among dogs is so commonly called *madness*, that I was induced, in the last edition, to detail it under this popular but erroneous appellation: it is also not unfrequently called by the still more erroneous name of *hydrophobia*. To prove the misapplication of these terms, it is here only necessary to remark, that, as rabid dogs never express any dread of water, so hydrophobia cannot apply to this specific ailment in them. And as there is very seldom a perfect alienation of mind, but on the contrary, in by far the greater number of cases, there is perfect recollection, a clear discrimination relative to objects and persons, and but little interruption to any of the faculties of the mind; so madness is almost equally a misnomer with hydrophobia. As a more erudite, though equally objectionable term, it is now generally named *rabies*; under which head it is detailed.

Mange.

THIS cutaneous affection is very common among dogs of every kind. It has been compared to itch in the human, and not without justice; as, if I am not greatly mistaken, the canine mange is capable of producing the human itch: but, whether the human itch can be given to dogs, is a point which my experience does not enable me to determine.

The canine mange is a chronic inflammation of the skin, dependent, in some instances, on a morbid action of the constitution: in others, it is the effect of infectious communication. It is not, however, so infectious as is supposed; for, I have known dogs to sleep with others troubled with it for some time, without becoming mangy; but, in other instances, the predisposition to it is such, that almost simple and momentary contact will produce it. The mange, which is the effect of infection, is more readily given to another than that which is generated.

Mange is also hereditary. A bitch, lined by a mangy dog, is very liable to produce mangy puppies; but the progeny of a mangy bitch is certain to become affected sooner or later. I have seen puppies covered with it when a few days old. The morbid constitutional action, by which mange is generated, is excited in various ways, and by various causes. When a number of dogs are confined together, the acrid effluvia of their transpiration and urine soon begets a most virulent mange, very difficult to be removed. The same happens when they are principally fed on salt provisions: thus dogs, who have come from distant countries, on ship-board, are generally affected with mange. Poor living, united with a cold and filthy mode of lying, will often produce it; but too full feeding, with a close and heated situation, are still more certainly productive of the complaint. In both these apparent contrarieties, the balance between the skin and internal circulation is not preserved, and the disease follows as a necessary consequence.

The mange has some permanent and fixed varieties; it has also some anomalies. One of the most common forms under which it appears is by a scabby eruption, which breaks out on various parts of the body; sometimes confined to the back: in other cases extending to the arms, thighs, and joints. These eruptions are first pustular; but in some cases they are simple cracks of the skin, exuding a serous discharge, which concretes into scabs.

Another form of the complaint is called the *red mange*, from a redness of both skin and hair in the parts affected. In this variety there is less pustular eruption, but nearly the whole skin of the body, particularly in white-haired dogs, is in a state of active inflammation: it is also hot to the feel, and itches intolerably. In the red mange, the hair itself becomes morbidly affected, and alters in its colour, particularly about the extremities. It also falls off, and leaves the body almost bare when the disease has continued long. The strong coarse kind of hair, called *wired*, is more peculiarly liable to suffer this discolouration.

Another form of mange, but one much less frequent than either of the former, appears to be a peculiar affection of the sebaceous glands, by which they become internally ulcerated, and have their sebaceous outlet preternaturally enlarged. The affection seldom shews itself universally, but partially, as over the face, around the joints, and in solitary patches over the rest of the body. The affected parts are tumid, shining, and look spongy; from the little openings of which, a moisture, between mucus and pus, issues. I have never seen this affection but in the larger breeds of dogs; and usually, I think, in pointers and setters.

A fourth appearance that mange frequently assumes is called, by sportsmen, *a surfeit*. It appears, in many cases, the consequence of some active inflammatory state of the constitution, generally of some local internal inflammation in particular. In these cases it puts on something of an acute form. Thus bitches after pupping, and dogs newly recovered from distemper, are often attacked with it. Other sources of fe-

febrile irritation may also produce it: thus when a dog travels during a great part of a very hot day, and becomes afterwards exposed to cold, a surfeit is sometimes the consequence. Likewise, after other inflammatory attacks, an eruption suddenly appears, accompanied with great heat and redness. It is usually seen in the form of blotches, and it is but seldom that it extends universally over the body. In some cases there is little appearance of raised scab, but large rough patches shew themselves, from which the hair falls, and leaves the skin bare and even, except the elevation occasioned by a branny scaly eruption, which itches with more or less violence. Some sportsmen think a surfeit occasioned by giving the dog his victuals when too hot. Salt provisions, it is certain, will occasion it; and long-continued feeding on oat or barleymeal will also bring it on in some instances.

The *Anomalies* of mange are several. Canker within the ear, and that without also, are affections whose origins are mangy. Inflamed scrotum and ulcerated claws are of this class, as well as ulcerated eyelids also. The *general* treatment of all these must be the same; the *immediate* applications proper, are detailed under the several heads.

An *acute* mange also now and then appears. In these cases a violent febrile affection attacks the animal; he pants, and is very restless. Some part of the body (usually the head) soon begins to swell, which, the second or third day, gives place to ulceration of the nose, eyelids, lips, and ears. This ulceration proves superficial, but extensive; and continues a longer or a shorter period, as the treatment is more or less judicious. Bleeding, aperients, and febrifuges, form the constitutional remedies. The topical ones are tepid fomentations the first two days; and, when the tumefaction has given place to ulceration, the application of a cooling unguent of superacetate or *sugar of lead*, with spermaceti ointment, will be proper. What remains of the affection, in a week or ten days' time, may be treated as common mange.

Mange is universally considered as troublesome and loathsome, but it is not generally considered as otherwise hurtful.

It will, perhaps, excite some surprise therefore, when I affirm, that it is not only hurtful, but not unfrequently fatal also. When long continued, it is very apt to end in dropsy. In some cases it diseases the mesenteries, and the animals die tabid; and in no instance can it be neglected with impunity. In sporting dogs, its existence greatly unsuits them for their various uses. It vitiates their scent, and lessens their wind and strength; and, as before hinted at, I do not think dogs healthy companions for their owners, when much affected with this complaint.

Treatment of Mange.—Whatever similarity may exist between this complaint and the human itch in other respects, a very great difference is observed between the obstinacy of the one, and the ease with which the other is cured. Medical practitioners among the human, consider the itch as local; but veterinarians, to their vexation, will find mange constitutional: too often very deeply rooted also. Like the human itch, it is best cured by remedies that excite absorption; and the grand remedy of the one is also the general application for the other, which is sulphur: but, as mange exhibits greater varieties, and is altogether more difficult of cure, it is seldom that we can trust to this alone for that end. The following formulæ are adapted for the *first* described form of mange:—

No. 1.—Powdered sulphur, yellow or black.....	4 ounces
Muriate of ammonia (<i>sal ammoniac</i> ,} crude) powdered	half an ounce
Aloes, powdered	1 dram
Venice turpentine	half an ounce
Lard, or other fatty matter	6 ounces.—Mix.

Or,

No. 2.—Tobacco in powder	half an ounce
White hellebore in powder.....	half an ounce
Sulphur in powder	4 ounces
Aloes in powder	2 drams
Lard, or other fatty matter	6 ounces.

Or,

No. 3.—Powdered charcoal	2 ounces
Sulphur, powdered	4 ounces
Potash	1 dram
Lard, &c.	6 ounces
Venice turpentine	half an ounce.

Or,

No. 4.—Sulphuric acid (<i>oil of vitriol</i>)	1 dram
Lard.....	6 ounces
Tar	2 ounces
Powdered lime	1 ounce.

Or,

No. 5.—Decoction of tobacco	3 ounces
Decoction of white hellebore.....	3 ounces
Oxymuriate of quicksilver (<i>corrosive sublimate</i>).....	5 grains.

Dissolve the corrosive sublimate in the decoctions, which should be of a moderate strength: when dissolved, add two drams of powdered aloes, to render the mixture nauseous, and prevent its being licked off, which ought to be very carefully guarded against.

The formulæ for *red mange* are as follow:—

No. 6.—Of either of the ointments already pre- scribed, 1, 2, or 3	6 ounces
Mercurial ointment, mild	1 ounce.—Mix.

Or,

No. 7.—Powdered charcoal	1 ounce
Prepared chalk	1 ounce
Superacetate, or <i>sugar of lead</i>	1 dram
White precipitate of quicksilver	2 drams
Sulphur	2 ounces
Lard	5 ounces.—Mix.

In some cases, the mange ointment, No. 4, alternated with No. 6, one being used one day, and the other the next, will be found beneficial. In others, benefit has been derived from the wash, No. 5, united with lime water. In slight cases of

red mange, the following has been found singularly successful:—

No. 8.—Oxymuriate of quicksilver (<i>corrosive sublimate</i>) powdered	6 grains
Sulphuretted potash (<i>liver of sulphur</i>).....	half an ounce
Lime water	6 ounces.—Mix.

The *third* variety requires a considerable difference in the treatment. When the little spongy openings, piercing the cellular tissue, will admit of it, they should be injected by means of a very minute syringe, with the wash No. 8. The general surface should also be anointed with the following:—

No. 9.—Ointment of nitrated quicksilver	2 drams
Superacetate of lead	1 scruple
Washed flowers of sulphur.....	half an ounce
Lard	1 ounce.—Mix.

The *fourth* kind of mange, called *surfeit*, requires little variety in the treatment, except that bleeding, purging, with every other part of a depleting treatment, are here more particularly necessary. With regard to the external applications, it should be remembered both in this, and all the other kinds of the disease, that, when the sores are very irritable, and much inflamed, it will be frequently essentially necessary to allay the heat and inflammatory irritation in them before they will bear any of the regular mange applications. The best means of doing this will be by anointing them with the following for a few days:—

Superacetate, called <i>sugar of lead</i>	1 dram
Spermaceti ointment	2 ounces.

When the irritation is allayed, proceed with the ointment No. 3, or alternate this with No. 6.

Besides the fixed varieties, before described, mange puts on different appearances in different subjects; but they may be all referred eventually to one or other of these heads. Numerous *domestic* remedies are in use; but, I believe, no one article acts so favourably as several united. It may, perhaps, not be too much to say, that the recipes already given will

meet every variety. They are proved by long experience, and a successful practice. Tobacco water is often used for the cure of this complaint, and, in very slight cases, it frequently does some good ; but, unless used with extreme caution, it is a most dangerous remedy, from the tendency all dogs have to lick themselves ; and when they do this with tobacco, the effects are often fatal. I have myself seen several poisoned by these means. Great caution is also requisite, for the same reasons, with all kinds of washes in which there is any thing active, as mercurials, &c. It is also a common practice to dip mangy dogs in the tanners' pits ; but it is a very filthy, and not often an efficacious, one, except in very slight cases : in such instances, an infusion of oak bark, with a little alum, would of course do as well.

Having detailed the outward applications, it becomes necessary to mention the internal ones that are required. When mange is generated, the constitution must be at fault to produce it ; and, when it is taken, it will itself affect the constitution : so that in all, except very slight cases indeed, some internal remedies are requisite. In very full habits, and particularly in red mange, bleeding is very proper *. I have also, in some instances, experienced benefit from a seton placed in the neck as a counter drain, particularly when the head has been much affected. It is also very requisite to attend particularly to the food : whatever has been injudicious, both as to quantity and quality, should be altered. Frequently a total change in the manner and matter of feeding assists the cure very materially.—*See the subject of FEEDING.*

Purges, when regularly administered, often prove very useful ; for which purpose Epsom salts may be given, two or three times a week, in mild doses. But the most effectual internal remedy is a judicious use of alteratives. Red mange

* In the Philosophical Transactions, No. xxv, p. 451, is detailed a case of a mangy dog successfully treated by transfusing into him the blood from a healthy dog. How far a similar result would follow in other cases is doubtful.

requires the aid of mercurial alteratives. Indeed, they assist in every variety of it, but this one can hardly be cured without. The following formula is a good one:—

Black sulphuret of quicksilver (<i>Æthiops</i> mineral).....	1 ounce
Supertartrate of potash (<i>cream of tartar</i>)	1 ounce
Nitrated potash (<i>nitre</i>)	2 drams.

Divide into sixteen, twenty, or twenty-four doses, according to the size of the dog, and give one every morning or evening. Any of the other medicines of this class, mentioned under the head ALTERATIVES, may be also used on these occasions.

In desperate cases the following may be tried, after the others have proved unequal to the cure:—

Sulphuric acid (<i>oil of vitriol</i>).....	10 drops
Conserve of roses.....	1 ounce
Flour of sulphur	half an ounce.

Divide into eight, twelve, or fifteen balls, according to the size of the dog, and give one every day.

Or the following:—

Oxymuriate of quicksilver.....	3 grains
Spring water	3 ounces.

Dissolve, and make twelve or fifteen doses of it, according to size, and give one every night and morning.

With regard to external applications, they should, particularly when liquid, be used every day. The mercurial ones require some caution, both to prevent the dog from licking them, and also to watch that salivation may not be occasioned by their use. When mercurial preparations are licked by dogs, they are apt to occasion violent and dangerous diarrhoea. Not only, therefore, should the licking be very carefully guarded against; but, when any danger of this kind has occurred, a dose of castor oil should be immediately given; after which, astringents, with a small proportion of washed sulphur in them, will prove useful.

In the use of ointments, it is necessary to remark, that they are too apt to be smeared over the hair, without being ap-

plied at all to the skin itself. It requires, at least, two hours to *dress* a dog thoroughly. The hair should be parted almost hair by hair, and a small quantity of ointment should be rubbed actually on the skin, between the parted hairs, by means of the end of the finger. After every part is done, the hair may be smoothed down, and the dog will appear, when the operation has been neatly managed, as though nothing had been applied. After three or four dressings in this way, the dog may be washed with soft soap and water, and the ointment again applied till the cure is complete. In old and bad cases of mange, it will be frequently requisite to continue the treatment a very considerable time, to ensure a perfect removal of the complaint. I once dressed a very favourite setter, who had had virulent mange five years, every day, or every other day, for twelve months, before I could completely conquer the disease: but this determined perseverance effected a permanent cure.

Neck, swelled.

YOUNG dogs are very liable to have a glandular swelling at the front of the neck, or throat, immediately before the windpipe. This is treated on as BRONCHOCELE. Another cause of swelling in the neck arises from cold, and is rheumatic; in which case the animal appears with his neck swelled; the parts are very stiff, and the head is often held to one side. There are likewise great pain and soreness, and the dog cries on being moved.—See RHEUMATISM.

Œstrum, or Heat, in Bitches.

See BREEDING.

Paralysis, or Palsy.

A TOTAL or partial loss of the motive power of the limbs is very common to dogs from a number of causes. Either partial or universal palsy is very usual in rabies. The loins and hinder extremities are the parts in general affected; sometimes the muscles of the throat principally suffer, and now and then the paralytic affection is universal. In distemper it is very common for a dog to become palsied in his loins and hinder extremities: sometimes it affects the muscles of the head also, and those of the fore extremities. Now and then this paralysis continues through life. In very bad cases of distemper palsy, all the external muscles become first affected with a spasmodic irritation, similar to St. Vitus's dance in the human; and which often degenerates into complete paralysis. Accidents may also occasion paralysis, as blows, crushings from carriage wheels, &c. But as frequent a cause as any of canine paralysis, is rheumatism;—which see.

It is evident that the *treatment* must vary according to the cause producing the affection. General warmth, with stimulating applications to the immediate parts, forms the outline of the treatment proper for most cases. Sometimes the cold bath, however, proves most efficacious; but still, during the intervening time, the body should be kept warm. As a general remedy, an extensive pitch plaster is a very good one. Blisters and electricity are sometimes useful. For local injuries, a seton opposite the injured part is proper.

Peripneumonia.

See INFLAMED LUNGS.

Physic.

ON many occasions, purging medicines are very proper and useful to dogs. In sickness, by purging we frequently restore health; and, in health, by the same means we often ensure its continuance. Costiveness is very prevalent among dogs, particularly among such as have little exercise, and are fed wholly on flesh. A costive state of body, if not attended to, frequently degenerates into absolute and obstinate constipation; and many dogs are destroyed by it. In such cases, a proper purgative, given in time, would prevent these consequences. Fits frequently arise from a costive habit, and the want of proper physic. Worms are also frequently removed by purgatives. Without physic, dogs cannot so readily be got into hunting condition: but aperients, when judiciously managed, increase their wind, vigour, and durability.

Many things may be given as physic to dogs. For small weakly ones, the safest purgative is *castor oil*; but sometimes the stomach refuses to retain it. Another liquid purgative is *syrup of buckthorn*, which agrees with many dogs very well. *Jalap* is not a bad purgative to some dogs; on others it operates but little. *Senna* I have no experience of. *Gamboge* is too violent. *Calomel* is an excellent auxiliary to other purgatives; but alone, it frequently proves more emetic than purgative; and a dose sufficient to purge, when given alone, will sometimes either inflame the stomach and bowels, or it will salivate. *Aloes*, therefore, prove the most unexceptionable and convenient means for purging of dogs; but an infinitely greater quantity is necessary for this purpose than is required by a human person. Half a dram of aloes may be considered as a dose for a small dog; a large dog will take from two to three drams. To quicken its action, or in cases of worms, or as a cleanser, from two to six grains of calomel may be added.

Piles.

DOGS are very subject to piles, but the symptoms, by which the complaint shews itself, are by no means known as such, although they are not very dissimilar to the human haemorrhoids. Piles are brought on by confinement, heat, and heating food ; and shew themselves by a sore red protruded anus, which the dog aggravates by dragging it on the floor. Piles are likewise frequently the effect of costiveness. The tenesmus occasioned by diarrhoea may readily be mistaken for piles, from the anus appearing red and sore. In such a case, to effect a cure the looseness must be restrained, and the sore anus may be anointed with the ointment directed below, omitting the tar.

The habitual piles will be greatly relieved by the use of the following ointment :—

Sugar of lead	6 grains
Tar	half a dram
Elder ointment, or fine lard	3 drams.

Mix, and anoint the fundament with it two or three times a-day. To correct the habit towards the disease, feed moderately on cooling food, exercise sufficiently, and, as long as the disposition to it is considerable, give daily one of the following powders :—

Nitrated potash (<i>nitre</i>), powdered	half a dram
Milk of sulphur	3 drams.

Divide into nine, twelve, or fifteen doses.

Poisons.

THE popular and generally understood term *Poison* is yet, in some respects, a vague and indefinite one ; as substances that are most noxious and destructive to one class of ani-

mals prove perfectly harmless to others. Henbane (*hyoscyamus niger*, LINN.), which is eaten with impunity by horses, oxen, goats, and swine, proves most baneful to the canine genus. Opium, on the contrary, may be taken in considerable quantities, by dogs, without serious injury; but it rarely fails to prove fatal to the human subject. The phelandrium aquaticum kills horses, while oxen devour it without harm. Poisons have, therefore, been divided into relative and common, or such as are hurtful only to particular classes of animals; and those which prove destructive to all, as the several oxides of mercury, arsenic, and copper; the concentrated acids, &c. &c.

Dogs are not unfrequently poisoned either by accident or design; and as the circumstance is sometimes discovered in time for relief to be afforded, so a knowledge of *counter poisons*, and of the general treatment proper on such occasions, form material branches of canine pathology; and as also, when no relief can be obtained, it is still very desirable for the ends of justice (when wilful poisoning is suspected) to be enabled to establish the fact of administering, and of the nature of the subject administered; so an acquaintance with the various substances commonly employed for this purpose, the symptoms produced by them, and the appearances that the parts acted on present after death, are necessary parts of the canine medical practice.

The limits of the present work will necessarily confine me to noticing such articles only, as, by their popularity, are most likely to be made use of purposely to destroy, and such as chance may, with some probability, throw in the way of the animals themselves. Those who wish for further information relative to the effects produced on dogs by various poisonous agents, may consult Abbé FONTANA, ORFILA, Mr. BRODIE, &c. &c., who have sacrificed more dogs in their rage for experiment than humanity dares to think of.

Poisons are usually divided into mineral, vegetable, and animal; in which order I shall notice them.

MINERAL POISONS.

Corrosive sublimate, or oxymuriate of quicksilver, is a most deadly and unmanageable poison to dogs, in doses as small even as five or six grains. Its effects are observed soon after it is taken, by the distress of the animal, by his frequent retchings, insatiable thirst, panting, and anxiety for a cool situation. The mouth becomes swollen—when the dose has been large, it appears ulcerated, and emits a very foetid odour, which circumstance forms a very strong characteristic both with regard to the animal's having been poisoned, and also to the article employed for the purpose. As the symptoms advance, the retchings are tinged with blood; the stools become liquid and bloody also; the pulse is small and quick, the extremities become cold; violent tremblings, paralysis, or convulsions follow, and death relieves the sufferer. On examination of the body afterwards, the whole alimentary canal, beginning at the mouth and proceeding backwards, exhibits marks of the corrosive nature of the matter taken. The stomach, on being opened, will appear covered with highly inflamed patches, and the villous folds of its inner and rugose surface will present gangrenous and ulcerated spots, and a ready separation of the mucous from the muscular coat, with blood often suffused between them, which circumstances only take place when a most acrid poison has been swallowed. The intestines also shew appearances of great inflammation, particularly of their inner surface, which will be found sprinkled with gangrenous specks, and, moreover, frequently filled with a thick bloody mucus. Such are the usual morbid appearances: but, satisfactorily to detect the presence of a poison, and the immediate nature of it, some of the liquid contents of the stomach and bowels, both before and after death, should be saved, and undergo a rigid chemical analysis. In general cases, the addition of potash to some of these liquid contents will occasion a light yellow precipitate when corrosive sublimate has

been the poisonous agent*; but a practical chemist will employ many other tests.

The *medical treatment* to be pursued in these cases consists in either endeavouring to envelop or to neutralize the acrid matter: the former may be attempted by means of a glairy fluid, for which purpose the whites of eggs have proved the most effectual means, beaten into a liquid, given in large quantities, and repeated as often as they have been ejected. When these are not immediately at hand, milk may be substituted. Mild clysters should also be thrown up. When the stomach is somewhat appeased, give an opiate and castor oil. Large doses of soap, dissolved in water, have been recommended as a counter poison to corrosive minerals, or their preparations, and, in the absence of eggs, should be tried.

Arsenic.—This powerful oxide is often given to dogs, and they not unfrequently find it for themselves in a state of mixture with other matters placed to poison rats. The effects produced by it resemble those occasioned by corrosive sublimate, except that, although they prove equally fatal, they are not apparently so intense. The mouth, likewise, is not usually affected, in an equal degree, with this poison as with the other. Dissection, also, detects similar morbid appearances to those above detailed; but, unless a very large dose has been taken, there is not such complete lesion of the coats of the stomach and intestines; but the gangrenous spots and the excess of inflammation are fully sufficient to detect the disorganizing action of a mineral poison. Instead of subjecting the liquid contents of the stomach and bowels to the action of potash, as directed when corrosive sublimate is looked for, it is usual to detect arsenic by applying the blue ammoniacal sulphate of copper, which will produce a lively green if arsenic is present. A red hot iron will also occasion

* A ready, although not a very humane, mode of detecting the presence of poisonous matter, is to give to fowls, birds, or any small animal, some of the early ejected contents of the stomach of the dog to which poison has been supposed to be given.

these contents to give out a garlic-like smell under similar circumstances.

The *treatment* proper, in cases of arsenical poisoning, is to give sugar dissolved in milk, in considerable quantities, until it may be supposed that all the poison is evacuated from the stomach, when a similar treatment is to be pursued to that before recommended.

Verdigris.—The rust of copper is often taken by dogs, from the careless practice of leaving acidulous remains of food in copper vessels. The effects produced are not unlike those already detailed, but less violent; neither are the appearances after death dissimilar, except that the ulceration and gangrenous spots are less strongly marked. The presence of copper may be detected by the prussiate of potash, which occasions a reddish precipitate in the liquid contents of the stomach and bowels when added thereto.

The *treatment* in no wise differs from that detailed in mercurial poisonings.

Lead.—I have frequently seen dogs fatally poisoned by drinking water from leaden vessels, or by lapping the water left in the hollows of the lead coverings of areas, &c. The same occurs likewise from the licking of paint, which they may have accidentally smeared themselves with; and it is to be observed, that a smaller quantity of lead in this way is sufficient to prove fatal, than would be supposed. The symptoms produced are vertigo, violent griping pains, vomiting, with purging stools in some cases, and costiveness in others: towards the close of fatal cases, paralysis and spasmodic twitchings take place. On dissection of these cases, there is seldom observed any lesion of the coats of either the stomach or bowels; but the inflammation is intense, and appears usually in patches. I have also not unfrequently met with intussusception.

The *treatment* (when lead may be suspected to have been taken) is to be commenced by an active purgative, as sulphate of magnesia (*Epsom salts*). Should this be rejected, a ball with calomel and aloes may be substituted, and may be

repeated until the bowels are perfectly cleared out. The body should be afterwards kept soluble by castor oil; for I have always observed a costive habit from paralytic torpor of the bowels remain some time after the action of lead.

Quicksilver.—When mercurial ointment is rubbed on dogs, without muzzling or covering them, it is very common for them to lick themselves, and to become, by this means, fatally poisoned. In such cases the stomach is usually but slightly affected, but a diarrhoea of great violence follows, attended with bloody stools from ulceration in the bowels. In these cases, commence the *treatment* by giving a mixture of castor oil and whites of eggs, in equal parts, sufficient to remove the offending matter; proceed next to wash off all the remaining ointment, and then give opiates and astringents.—See LOOSENESS.

From this detail of appearances produced by the more active mineral poisons, both before and after death (which are all drawn from numerous and well defined cases that too frequently came under my notice), it will be apparent, that it is not difficult to discriminate between the inflammation brought on by their agency, particularly when full doses have been given, from those inflammations occasioned by cold or other causes. When caustic mineral salts or acids have been taken, the symptoms are more urgent, the progress more rapid, and the pain and distress greater than when inflammation has proceeded from other sources. The foetor from the mouth, and the bloody vomitings and stools, are also strong living characteristics of poison. The dead ones may be gained from the extreme inflammation and gangrenous state of the alimentary canal, but more particularly from the ulcerated state of the stomach* and bowels, and

* It is not very unusual for the solvent power of the gastric juice to erode through the coats of the stomach; but, in such case, the opening is one simple and determinate one only, and always situate at that part where the gravity of the gastric fluid has placed it particularly in contact with the stomach, and in no other.

from the early tendency in the whole body to become putrid and decomposed. The foetor that comes from the diseased parts is likewise peculiar in these cases, being more than usually pungent and lasting; so much so, that I have distinguished it three months afterwards from the instruments, dress, and other articles used during the examination of the body.

VEGETABLE POISONS.

Opium.—In the former edition of the CANINE PATHOLOGY, I stated that, as far as my experience went, *opium* was not deleterious to dogs when received into the stomach; for that very large doses of the solid mass were invariably returned from the stomach, and that smaller, though considerable quantities, produced but little derangement of the system. ORFILA, however, whose experience has been purchased by the sacrifice of whole hecatombs of dogs, asserts that it will kill, although he acknowledges (and which corroborates my former remarks on it) it is so variable in its effects, that he has often given very considerable doses without at all injuring the animal. When it does prove fatally deleterious, the symptoms detailed by him are convulsive efforts of all the muscular parts, succeeded by dejection and universal paralysis. On dissection, little appearance of inflammation is visible in the digestive organs, but more of it in the lungs. ORFILA likewise observes (which fully agrees with my experience), that the narcotic effect of opium is not apparent in the dog by any dose taken into the stomach; but it is a curious fact, that introduced either into the blood vessels by injection, or into the intestines per ano, it exerts its narcotic influence fully.

Vomic nut, or crow fig (Strychnos nux vomica, LINN.).—This berry, or rather seed of a berry, is a native of the East Indies, and is a violent narcotic poison to many animals: to others it proves not equally noxious; but it does not appear wholly innocent to any. It possesses great power, but is very unequal in its action, not only on different animals, but also on the same animal at different times, and under differ-

ent circumstances. It is a common but a very erroneous prejudice, that it proves poisonous to such animals only as are born blind. It is a deadly agent, not only to the whole of the canine and feline genera, but it destroys hares, rabbits, horses, asses, and most birds. It is irregularly deleterious to man, fifteen grains having proved fatal to one, and a whole nut or seed has failed to injure another. LEURIERO relates, that a horse died in four hours from a dram only. Five or six grains are sufficient to kill a rabbit or hare. I destroyed a very large rabid Newfoundland dog in five minutes and a half by a dram of it, which was given in butter. Half a dram was given to another, of middling size, which destroyed him in twenty-eight minutes; and twelve grains proved fatal to a smaller one in twenty-five minutes. A watery extract is more quick, as well as more certain, in its action, a few grains of which seldom fail to kill in a few minutes, if given in solution: it acts less speedily when given in the form of pills. But as it is, under all circumstances, not uniform in its action, so I cannot, as formerly, recommend it as a safe agent to depend on for the destruction of a dog. When it is actually necessary to destroy one of these valuable animals, humanity dictates that it should be done speedily, and in a way to prolong the sufferings as little as possible. In a note added to the next article, a better method will be stated. It is, however, sufficiently deleterious to make it very commonly resorted to on such occasions by malicious persons, particularly as it can be easily procured, under pretence of destroying vermin of various kinds. Like opium, the nux vomica fails to produce any of its narcotic effects on dogs, when introduced into the stomach; but it occasions violent tetanic convulsions, laborious respirations, and general torpor, and it thus destroys by robbing the nervous system of its energy; and that so speedily, that its presence is not easily detected by any morbid appearances occasioned: neither are any means, unless immediately resorted to, sufficient to restrain its consequences. An emetic should be given within a minute or two after the exhibition of the poison; and this

should be followed by a large teaspoonful of mustard, to give a reasonable chance of success.

Angustura pseudo ferruginæa.—A false species of angustura has entered into the shops of many druggists, and has occasioned considerable mischief. Some years ago, I unfortunately destroyed a very favourite dog by giving him, as a tonic remedy, this spurious article, which had been furnished me by my druggist, as the genuine angustura bark. This deleterious article, although it is decided by HUMBOLDT to be nowise related to the angustura tribe, has yet been very generally diffused, and used as a substitute for the true bark *.

Prussic acid.—In its highly concentrated state, this acid (which, it is fortunate, is extremely difficult to obtain, and still more so to preserve) is so active, that one, or, at the most, two drops applied within the eye, nose, or on the tongue, are sufficient to destroy life in a minute or two. It is to the presence of this acid that many vegetable substances, particularly all bitter kernels, owe their deleterious properties. The lauro cerasus, or cherry laurel, used in cooking for the kernel-like flavour it gives, under distillation yields a water that proves poisonous to dogs. The essential oil of the cherry laurel, as well as that of bitter almonds, are both so strongly impregnated with prussic acid, that a very few drops given to the largest dog, prove immediately fatal †. An extract also, made from either of these articles,

* L. A. PLANCH, a French apothecary, has accurately described the article in a memoir, entitled *Notice Chimique sur les Angustures des Commerce*.

† It is not unfrequently a subject of inquiry, how it may be possible to destroy a dog with least pain to himself, and least shock to the feelings of his owner. Although shooting and hanging are not, in themselves, painful deaths, yet the violence necessarily committed is revolting to one's feelings. It is both selfish and imprudent to familiarize the minds of servants to these acts. Whenever, therefore, cases arise (and many such do occur) where it would be infinitely more humane to destroy an animal than to prolong a miserable existence; and when the more usual modes are objected to on account of the violence and force neces-

is speedily fatal in a small dose. The effects produced by all these are nearly similar. Taken into the stomach, they destroy by at once paralyzing the sensorium. Introduced immediately into the blood vessels, most of them exert a narcotic influence, but are no less certainly fatal. An emetic immediately administered, and followed up by active spicy stimulants, as mustard, pepper, &c., mixed with vinegar, afford the best chances of arresting the fatal effects of these potent articles.

The *Woorara*, *Lamas*, *Ticunas*, *Faba sancti ignatii*, *Upas antiar*, and *Upas tieuté*, are vegetable poisons, indigenous to southern and eastern climes, and by far more potent and deadly than our most noxious articles. Prepared with much art and care, these extracts retain their poisonous qualities a great length of time; and the smallest puncture made with the finest instrument, as a sharp dart or arrow, embued with a solution of either of these poisons, proves fatal, in some instances, within a minute. Mr. BRODIE has detailed some experiments made by him with these poisons on dogs, which shew their dreadful activity. Mons. DE LA CONDAMINE's experiments at Paris are still more frightful pictures of their potency.

ANIMAL POISONS.

The *rabid virus* is the most deadly among our animal poisons, and thousands of dogs are every year destroyed by it. The effects of the rabid bite are detailed under the article RABIES.

Viper bite.—In every quarter of the globe but Europe, dogs are exposed to the venomous attacks of snakes, whose bite is instantly mortal. The viper is the only animal of this kind in Britain capable of inflicting a wound attended with serious consequences, and to which dogs become exposed when hunting. In these cases, the bitten part swells enor-

sary, either of these essential oils dropped on the tongue, or a very small ball made from the extract, will extinguish life almost instantaneously, and without pain.

ously, and the animal expresses great distress and suffering: at length he becomes affected with torpor, or, in some cases, with convulsions, when death commonly ensues. But it is not often that these bites are fatal, particularly when proper means are resorted to to obviate the effects. These means consist in freely rubbing the bitten part with volatile alkali, or with the spirit of hartshorn mixed with oil; giving also five, six, or eight drops of the volatile alkali, or twenty drops of the spirit of hartshorn, in a teaspoonful or two of sweet oil, every hour, until the amendment is evident.

The *venomous stings of Hornets, Wasps, and Bees*, may be relieved by applying the vegetable blue used to colour linen. Laudanum also, or vinegar or brandy, will, either of them, often remove the pain and inflammation speedily.

Polypus.

Now and then an excrescence is found protruding itself from some cavity, of an indeterminate form, but usually pendulous and nipple shaped. I have seen them in the nose, within the uterus and the sheath of the penis, as well as from other parts also; but by much the most usual situation in which polypi are found, is within the sheath or vagina of the bitch.

When the pedicle of the polypus can be reached up to its origin, it may be taken off by excision: when this cannot be conveniently done, still a ligature may commonly be introduced around its base, and suffered to remain till the whole drops off. I have frequently removed polypi by both these methods, without future inconvenience or reproduction.

Pulse.

FROM the greater irritability of lesser animals compared with the larger, and the extreme quickness of their circulation, the motions of the heart and arteries do not present such exact criteria of health and disease as they do in the horse and other large animals. Nevertheless, the action of the heart, and the pulsations of the larger arteries, may be felt with propriety in many cases, and will serve as some guide to ascertain the degree of disease. The pulsations will not only be increased in quickness, but they will present a vibratory feel in violent inflammatory affections. In inflammations of the lungs they will be very quick and small, but will increase in fulness as the blood flows during bleeding. Something like the same will occur, but not in an equal degree, in inflammations of the stomach and bowels also. As the pulsatory motions, therefore, are not so distinct in the dog as they are in larger animals; so, in general, the state of the breathing, which, in most cases, is regulated by the circulation, may be principally attended to as a mark of greater or less inflammatory action. When a dog, therefore, pants violently, his circulation, or in other words his pulse, may be considered as quickened.

Pupping.

GREAT numbers of dogs die every year in bringing forth their young. A life of art has brought the human curse upon them, and they seem, in common with their female owners, to be doomed to bring forth in sorrow and pain.

When bitches are at heat, care should be taken to prevent their intercourse with dogs much larger than themselves; otherwise the size of the father influencing the size of the progeny, they become disproportionate to the parts of the mother, and she cannot bring them into the world.—See

SPAYING.—Thus cats, being all of them of nearly one size, seldom die in kittenning. All dogs, who are much domesticated and confined, appear particularly subject to difficulty in bringing forth, consequently during pregnancy much exercise should be given. Sometimes the constitution is not equal to the exertion ; and sometimes false presentation increases the obstruction. Whenever a difficulty in pupping occurs, which has existed more than four or five hours, the bitch should be examined by the parts of generation ; and, if any portion of a pup should be found to present itself, so as to be within reach of the finger, a skain of worsted ought, if possible, to be fastened around it ; and, during the throes of the animal, it should be gently drawn away. If it cannot be reached in this way, a little longer time may be allowed ; but if, after all, it proceeds no farther, a pair of forceps may be used to lay hold of it with. It is a good practice to give a mild purgative as soon as any symptoms of pupping appear ; and, when delivery seems much delayed, it will be prudent, in all cases, to bathe in warm water, and to give nutritious matter, as gravies or broths, with occasional doses of laudanum united with æther if any convulsive appearances come on. The patience of bitches in labour is extreme, and their distress, if not relieved, is most striking and affecting. Their look is, at such times, particularly impressive.

A wish to relieve them has very frequently engaged me in performing the Cæsarean operation ; but I never succeeded in any one instance. I attribute this failure, however, principally to the delay in the time, which humanity suggests ; and not to the nature of the operation altogether, which is, however, sufficiently dangerous. Whenever pupping is protracted considerably, the puppies surely die ; and in those cases where the young are already dead from the effect of accident, they become the sure occasions of a protracted labour. Dead puppies come away piecemeal, sometimes many days after the natural time, and occasion a foetid discharge until the parts have reinstated themselves.

From a wish to rear too many young ones, persons are in-

duced, after a bitch has pupped, to overload the mother; and thereby they often lose both parent and progeny. Such a bitch will go on very well perhaps for one, two, or even three weeks; suddenly, however, she will be seized with convulsions, which will follow each other with rapidity, and carry her off. The cause is seldom suspected, but it always arises from debility thus brought on. A bitch should always, therefore, be allowed to suckle as many puppies only as her constitutional powers are equal to. To specify a precise number is totally impossible, as some mothers can bring up five or six with more ease than others can rear three. Strong healthy bitches, that have before brought up young, may rear four or five: delicate ones are sufficiently burthened with three; many can only bear two.

When a bitch, therefore, who suckles has had a fit, immediately remove the puppies: one or two may be put to her for half an hour, morning and evening; or, if she is distressed at their loss, and has much milk left, one may be left with her; but, unless the majority are taken away, she cannot be saved. As an internal remedy, employ the following:—

Sulphuric æther.....	1 dram
Tincture of opium (<i>laudanum</i>)	1 dram
Strong ale.....	2 ounces.—Mix.

Give from a dessert to two table-spoonfuls of this mixture, according to the size and strength of the patient, repeating the dose every two or three hours. Force down also some nutritious matter, solid or liquid, as diet; and, as soon as the animal will eat, let the food be of the very best kind, and in sufficient quantities. In such cases the warm bath is often very useful likewise.

Rabies Canina, or Madness, in Dogs.

THE popular and long-received name of *madness* has now given place to the more classical term *rabies**. The rabid malady is, unquestionably, one of great antiquity; for we

* Rabies, however, it is hardly necessary to remark, is so far from a new term, that it is a much older one than that of *madness*, as applied to this immediate disease in dogs. We have *rabidus canis*, in *PLINY*, and *canis rabiosa*, in *HORACE*, as well as in many other authors. But if *madness* is an improper term for the complaint in question, because wild delirium, rage, and ferocity, are so far from constant attendants on it, that they are seldom present; so it is evident that the Latin term *rabies*, which signifies rage and fierceness (*Iracunde & rabiose facere aliquid*, *CICERO*), must be equally so. *Hydrophobia* also, by which it has been occasionally called, is completely a misnomer, because in brutes there is never the slightest dread of water, either outwardly or inwardly applied. Dr. *PARRY* on this subject says, “To avoid the confusion attendant on the “use of an abstract term, which includes many varieties of phenomena, “arising from as many different causes, it might be proper altogether “to annul the term *Hydrophobia*” (both in man and beast), “as the expression of a genus, and to call the disease *Rabies*. Since, also, this “malady is neither peculiar to dogs, nor communicable only by them, “some objection may be justly made to the use of the adjunct, *Canina*. “For these reasons I proposed, nearly forty years ago, in a treatise “now deservedly forgotten, to designate the disease by the appellation “of *Rabies Contagiosa*; thus preserving the old generic term, and adding “another expressive of its mode of production.”—(*PARRY on the Rabies Contagiosa*, p. 119.)—To this it may be replied, that the mournful history of every hydrophobous case will shew that *rabies* is equally in the human a palpable misnomer: a mild delirium may occasionally confuse the regular order of ideas in both man and beast: but how seldom in either, particularly in the former, do we witness rage or fierceness? and whether *contagious* can be more justly applied to a disease that, although received, cannot, as we believe, be again communicated by man, admits of doubt. We have yet, therefore, to seek for a correct term for this anomalous malady. The French occasionally characterize the rabid disease by the term *Cynolisson* or *Cynolysson*; and we have met with *Cynolyssa* as an English name bearing the same import, as well as *Cynode'ctos* (*κυνοδίστος*), for one bitten by a mad dog; but if *λύσσα* may be rendered, as it has sometimes been, *torment*, from the bite of any

have authentic accounts of it for more than 2000 years. It is described with some accuracy both by ARISTOTLE and DIASCORIDES. Other of the antients likewise notice it*.—History has continued to furnish us with numerous traces of it, particularly in Europe, where it seems sometimes to have raged with epidemic fury, and at others to have been but little known†. In 1500, Spain was ravaged by it. In 1604 it was very common in Paris‡; and 100 years after this, Germany became the theatre of this dreadful scourge among its wolves as well as dogs. Naturalists, historians, and physicians, of every age, have left short but frightful records of its dreadful visitations; and periodical notices have shewn that it has never been wholly lost sight of. Some works of magnitude have also marked its ravages, written by the authors of Spain, Italy, Germany, and France; but their accounts were so blended with received errors, as to convey little information. The illustrious BOERHAAVE may, perhaps, be considered among the first who, by attentive observation, threw light on the rabid malady in dogs||. In England, little had appeared worthy of notice until the account presented by Mr. MEYNELL. This celebrated sportsman published his memoir in the 10th volume of the *Medical Commentaries*; and if his

venomous animal, then it would appear that *Cynolyssa* is a more critical term than any in common use. “La classification de la rage a quelque chose de défectueux dans toutes les nosologies.”—*Trolliet sur la Rage*, p. 575.

* Some doubt seems to be entertained, whether HIPPOCRATES, in his *Coacæ Prænotiones*, intended to describe the rabid malady, when he says “Phrenetici parum bibentes, strepitum valdè percipientes, tremuli aut convulsi.”

† Not that I believe the rabid malady ever arises spontaneously; but that sometimes the inoculation of it takes place under circumstances particularly favourable to its rise and future propagation, as will be hereafter explained.

‡ *Journal de Henri IV*, tome iii, p. 221.

|| Aphorism 1135, where, although some error is apparent, yet much truth also appears.

account of the rabid malady does not exactly coincide with future representations drawn from a wider field of observation, it nevertheless characterises the disease with considerable precision, and, at the time it was written, was calculated to do infinite good, by banishing some dangerous and erroneous opinions relative to it.

In 1806, rabies in dogs became very common in England, and extended to the vicinity of London, in which, during the next year, it increased to such a degree, that a day seldom passed without my being consulted on one or more of these cases: sometimes I have seen three, four, or five a day, for several days in succession. In the two following years it raged with nearly equal fury; and it is remarkable, that from that time to the present (1823), it has never disappeared in London: within the last two years its frequency has been rather increasing than diminishing. In the country, about the same proportion of cases have occurred for the last seven years. Towards the close of 1807, I gave to the public, in *A Domestic Treatise on Horses and Dogs*, the substance of the following remarks on the rabid malady; and very soon after, I presented a more condensed memoir on the subject, which (with much other *accredited** matter on the diseases of dogs) was inserted in REES's *Cyclopaedia*; and I believe I may, without fear of contradiction, and I hope without the reproach of improper vanity, assert, that, among the numerous publications which the prevalence of rabies and hydrophobia afterwards occasioned, there is scarcely one which has not borrowed something from one or other of these sources; indeed the plumes of some are principally gathered from them. Of this number a few have had the candour to acknowledge the obligation; others, less generous, have con-

* I have said *accredited*, because the ingenious collator, Dr. REES, not content with what I had furnished, chose to add the vulgar errors and traditional nonsense of huntsmen and grooms, which could only be accredited when error and prejudice held sovereign sway.

tented themselves with adopting, and giving, as their own, as much as suited their purpose*. One or two individuals, still more ungenerously to favour their own views of the subject, have endeavoured to throw a shade over the whole, by affecting to dispute the correctness of my statements, or the force of the inferences drawn therefrom†.

* I believe no one who reads the *Prize Dissertation* of Mr. GILMAN will doubt that, on the subject of the rabid malady in dogs, he was principally indebted to what had been made public by me. If it at all assisted the great cause of humanity, he is most welcome to all he obtained; and, had he been candid enough to have acknowledged the source from whence he derived his information, it would not, I hope, have discredited his cause. On this subject Dr. PARRY says, "Since writing the preceding remarks, I have perused the *Dissertation of Mr. Gilman on the Bite of a Rabid Animal*. In that part of this work which respects the symptoms of rabies in dogs—evidently taken from the article *Dog* in *Rees's Cyclopædia*, or at least from the same source."—*Rabies Contagiosa*, p. 170-1.

† I hope it would as little accord with my inclination as it would enhance my character, to attempt to sully any merited honours that shine around the grave of departed genius; but common justice to myself, and above all the great cause of truth, force me to the notice of what is well known to the medical world in general, and openly acknowledged by many of its most distinguished members,—that Dr. PARRY, of Bath, in his well-known work on the Hydrophobia, had by his severity, but still more by the unfairness of his criticisms on these remarks, subjected himself to a suspicion that candid examination was less his object, than invidious intolerance towards whatever differed from himself. Were my personal vanity alone concerned, I should probably best consult it by silence; for I have little reason to doubt, that, long after the theoretic views and dogmatic assertions which form the ground-work of Dr. P.'s publication are consigned to oblivion, these statements of undoubted facts, and these remarks drawn from long and attentive observation, will form a faithful portrait of the rabid malady, which will be resorted to by every one seeking information relative to it. The research and ingenuity displayed in this celebrated work are, unfortunately for the posthumous reputation of its author, tarnished by the artful attempts to make whatever has appeared from others either bend to the angle of view under which he has placed his subject, or by endeavours still more unfair to throw discredit on such portions as prove themselves too stubborn for his purpose. In this way Dr. P., on the authority of three

The following account of the rabid malady in dogs is the result of many years' diligent attention to the subject, combined with opportunities for observation so numerous and

hydrophobous cases in the human, and only one or two rabid ones in the brute, endeavours to disprove almost the whole of the vast mass of information collected and published by the most distinguished members of the profession during the last forty years; and, at the same time to prove, that the disease, in both the human and brute subject, has been hitherto entirely mistaken in cause, appearance, and effect.

But as the notoriety attendant on my extended experience in the rabid malady, and that of my late coadjutor and present worthy friend, Mr. YOUTT, with the weight of authority derived therefrom, might be supposed to militate more against the Doctor's new view of the matter than that of most others, so it was more particularly necessary, to further his cause, that a disparaging shade should be thrown over our public statements*; and we, therefore, were treated with even less candour and fairness than was observed towards the numerous other objects of his castigation. In his examination of our writings, Dr. PARRY has practised a conduct the most disingenuous. To produce an appearance of discordance and opposition between the several parts, he has selected detached and remote passages, and placed them continuously, purposefully to give them the appearance of a contradictory whole; in which way it is evident that the most perspicuous writer that ever put pen to paper might be betrayed into the most glaring seeming inconsistencies.

I can with truth affirm, that this attack on me as an individual influences me less in this notice than the more dangerous one made on truth in general by his dogmatic denial of notorious facts, that he might thereby, with some appearance of consistency, establish his favourite theory, that the human and brute malady are wholly the same in cause, appearance, and effect. "Laryngeal Spasm" is, with Dr. P., the foundation of both diseases; and as the hydrophobic symptom is one resulting from this spasm in the human subject, hydrophobia must necessarily be present in the dog also. To establish which exploded and even dangerous error, he denies testimonies the most credible and established, and, without

* Several cases of rabies, from the pen of Mr. Youtt, have appeared in the *Medical and Physical Journal*, and in the *London Medical Repository*, which were all drawn with the perspicuity and accuracy that mark his literary performances. That they were faithful portraits of the disease, his extensive opportunities and habits of observation will vouch; yet Dr. P. denies the existence of every one of these as a true case of rabies: on the contrary, so well versed does he think himself in canine pathology, that, by the mere statement of symptoms, he takes on himself to pronounce some of them Bronchitis, some Pneumonia, and others pure Inflammation of the *Fauces*!!!

extensive as perhaps never fell to the lot of any other person. These opportunities arising from some hundreds of distinct cases were none of them lost: the importance of the subject, and the popular attention directed towards the disease during the years of its prevalence, impressed my mind with more than ordinary interest. The subjects that daily fell under my notice were, therefore, sedulously watched while living, and the several varieties that occurred carefully noted down. Every popular remedy was tried, with many others, that, by

one solitary fact to support his statements, he goes so far as to pronounce every case in which there is not a manifest dread of water to be spurious, and, in fact, any thing but rabies. In the total absence of facts, arguments must necessarily be resorted to; and of what nature Dr. P.'s are, may be gained from the following specimen, which does not stand alone in futility. "How, if no dread of liquids exists in mad dogs, came 'the disease to be called, in all ages, hydrophobia?'"—*Rab. Contag.* p. 145.—Can any question be more easily and satisfactorily answered? Have we not innumerable instances of names borrowed from the human towards the brute, and from the brute towards the human, from a fancied or partial resemblance, when the designation in essentials was as intrinsically a misnomer as in this instance? But it is not necessary to rely on this well-known circumstance to disprove this non-reasoning; for the fact is, that rabies has not been so called, either universally or individually, when specifically noticed*. It has only been so called cursorily, and in vernacular language, by persons not pretending to scientific discrimination in general, or conversance with the complaint in particular. Throughout the whole of Dr. PARRY's treatise, a laboured attempt is manifest to *force* the human and brute malady into one parallel, and to assimilate their discordant features into one likeness. But, that this view of the subject is completely at variance with truth, an attention to the symptoms of the complaint in both subjects, during life, and an examination of the morbid appearances after death, will fully evince; and how dangerous a re-establishment of errors and prejudices, which it has been the endeavour of late observant writers to remove, may be gained, it is presumed, by an attention to the detail which I am about to enter upon.

* Et s'il étoit possible de soulever le voile dont le temps a convert la science des médecins grecs, nous verrions probablement qu'ils n'ont point confondu l'hydrophobie simple avec la rage, puisqu'ils les désignoient par deux expressions très-exactes, *hydrophobia*, horreur de l'eau; et *cynolyssion*, rage du chien....*Trait. de la Rage*, par Mons. Trolliet, p. 267.

analogy, seemed applicable to the case; and, when death took place, a careful examination of the morbid appearances was made in every instance which at all bid fair to throw light on the subject.

The necessity of a precise and clear knowledge of this direful malady cannot but be evident, when we consider its present prevalence, and how totally it has hitherto been misunderstood and misrepresented. Although, for ages, even the plague has hardly been more dreaded, yet in this, as well as in other countries *, perhaps, no popular subject presents

* Among our continental neighbours, where the ravages from rabid wolves, in addition to those of dogs, operating on a campaign country, might be supposed more constant and universal than with us, the want of correct information on the subject has been at least equal to our own. Such notices as have been within my reach from Germany, Spain, and Italy, present nothing at all satisfactory and precise as regards the brute malady. Neither in France is it better understood; for in a voluminous work of great research and ingenuity, written expressly on the rabid malady in general (and professing to contain whatever is known or could be obtained on the subject, by Mons. TROLLIET, Professor of Medicine in the Hotel Dieu, in Lyons), a meagre account, comprised in a single page, forms the whole characteristics of canine madness that his own observation, and the innumerable publications on the matter diffused over the Continent, furnished him with. Mons. T. even owns, " Quoique nous ne connoissions pas de signe certain de la rage dans le " chien, toutefois on doit soupçonner que cette maladie existe lorsque " l'animal devient triste," &c. &c. &c., p. 274. " Le degré de certitude " de l'existence de la rage s'accroît, si le chien qui présente ces caractères a été mordu en même temps qu'une personne en un animal qui " ait succombé à cette maladie," *Nouveau Traité de la Rage*, p. 275. On a comparison between the account of the rabid malady, as described in the report of Messrs. ENAUX and CHAUSSIER, and the above by Mons. TROLLIET, it is evident that both emanated from one source; indeed, one is a literal transcript of the other, and both are equally vague and indefinite. This appears the more extraordinary, when it is considered this joint work of Messrs. ENAUX and CHAUSSIER was a demi-official publication, directed at the immediate instance of Government to give to the French public the most correct information on the rabid malady. As a proof how qualified these gentlemen were to fulfil their instructions, we find that, by them, " A mad dog avoids water, which redoubles

such a complete tissue of error as this. I have before had occasion to remark, that the very term of *madness*, by which the disease has been so long and universally known, conveys an idea of it in most instances remote from the truth. By the term *mad*, persons naturally suppose that a dog, affected with the rabid malady, must necessarily be wild and furious ; and in every written description it is so made out: but so far is this from being the case, that in hardly any instance in an adult dog have I observed a total alienation of the mind ; on the contrary, in the greater number, the mental faculties have even been but little disturbed ; the unhappy subjects of the complaint commonly know the voice of their master, and are obedient to it, and that frequently to the very last moments of their existence.

In other animals, however, it must be allowed, there is more propriety in the term. Wolves seem to be ferocious and wild, but not senseless. Pigs labour under delirium : even the peaceable sheep becomes not only delirious but ferocious in this malady. In the rabid horse, the sight is most terrific ; I have seen one, during his delirium, clear a six-stall stable of racks, mangers, standings, and posts : every thing, but the bare walls, was levelled into ruins around him.

But if madness can thus be proved an incorrect term, that of *hydrophobia*, by which the brute rabies is sometimes called, is still more remote from any thing like critical accuracy, and, in fact, is as inapplicable to it as the human measles or small pox *.

“ his distress.”—“ He dies at the end of thirty or thirty-six hours, “ in convulsions.”—“ The dead body yields a most *infectious* odour :”— and, “ the person who touches his body should wash himself well with “ vinegar.” ORFILA, likewise, who is the French oracle as regards poisons, says, “ That men, horses, oxen, and pigs, become rabid with “ out being bitten by a rabid animal.” Every medical tyro knows the contrary here.

* This simple misnomer is, however, the least part of the mischief; for, unfortunately, a dread of water has been considered, by many persons, as the universal and grand characteristic of the complaint, as

Another popular prejudice equally absurd, though somewhat less dangerous than the preceding, likewise generally

well in the brute as the human subject, and as one by which it may be infallibly known; but this opinion is so utterly at variance with the truth, that rabid dogs, instead of shewing any dread of water, in most instances seek it with avidity, and lap it incessantly. It is incalculable the mischief that this universal prejudice has produced; it has rendered thousands of persons miserable for months and years even, while others it has lulled into a fatal security. Should a dog, from an affection of any kind soever, be prevented from swallowing, he is immediately pronounced mad, and is unreluctantly destroyed; while horror afterwards pervades the mind of every one who has been within his reach. Nor are the unfortunate persons, who have been bitten by this same dog for months or years even before, exempt from the panic; for, among other common errors that are current, it is believed that, if a dog becomes mad, any person, who may have been formerly bitten by the animal when in perfect health, is equally in danger, as though it had happened when the animal was really affected.

On the other hand, if a dog, under any complaint, can drink, he is pronounced free from all danger of madness; and so universal has this opinion been, that Dr. H., an eminent physician now in very extensive practice in the western part of London, who was consulted by a person bitten, immediately inquired whether the dog by which he had been wounded could drink; and, on being informed that he could, he peremptorily pronounced that there was no danger of madness, and actually recommended that no precautions whatever might be made use of. This gentleman was guilty of a piece of professional presumption and ignorance unworthy his rank and situation; and his advice, had it been followed, might have caused the death of three persons. Fortunately for them, his opinion was not attended to, and I dissected the wounded parts out of each of them. In five weeks, an unfortunate spaniel, who had been bitten by this same dog, became rabid; and in six weeks a horse, bitten by him, became so likewise.

While these sheets were preparing for the press, a similar instance of error in this particular occurred in the practice of Mr. YOUNG, to whom a dog unquestionably rabid was brought by a poor woman, whose hands were excoriated by a breaking out, and had been licked by the dog. On Mr. Y.'s intimation that it was necessary she should use some precaution, she applied to a medical gentleman, who assured her, that if the dog attempted to drink he was not mad, and no precautions were necessary. This opinion was likewise confirmed by another person who pretends to some veterinary knowledge.

received, is, that the removal of a supposed worm from under the tongue, during the dog's youth, will either prevent his becoming rabid at any future time, or otherwise will totally incapacitate him from biting in case he should become so (*see WORMING IN DOGS*). I have also known serious mistakes arise from a very general notion entertained, that a mad dog is instinctively avoided by another. Nothing can be more untrue: I have repeatedly seen rabid dogs living with others, who have not appeared to feel the smallest apprehension; nor do healthy dogs ever shew any appearance of dread in their encounters with those that are rabid, or avoid them when they meet: neither is the blood or flesh of a mad dog, when dead, capable of inspiring horror in a healthy one.

In a history of the rabid malady, it is worth inquiring into the mode of its origin; in what animals it may be supposed to have been first generated, and what other animals are known to be capable of receiving it from them. That the disease was spontaneously generated we are certain: the human contagions of syphilis, small pox, measles, &c. &c., were likewise first generated in this manner: but as these are now very generally considered never to arise spontaneously, are we warranted, from analogy only, to conclude that the rabid malady must now, in every instance, owe its origin to contagion? The opinions on this subject are various; and as the weight of authority is considerable on both sides, it might be prudent to hold our judgment in suspense, and not to decide too hastily, nor without due grounds. As far as my own experience goes, and as far as close observation and attentive consideration have enabled me to judge, I have no hesitation to give it, as my opinion, that the disease is never now of spontaneous origin. Among my almost unlimited opportunities of remarking the subject, I never met with one instance of rabies in a dog wholly secluded from the access of others. Such instances I know are on record*;

* Two cases that present themselves to my recollection elucidate the caution requisite in forming an opinion on circumstances in themselves

but I have so frequently witnessed the ease with which we may be deceived in this particular, and the great mass of evidence directly contrary to spontaneous origin, that I am

apparently conclusive. I was requested by a gentleman, residing in *Wimpole Street*, to examine a dog, which I at once pronounced rabid; on which this gentleman informed me, that if the dog was so, he certainly must have become so without infection (which he knew was in direct opposition to my opinion); for that this dog, which was a very great favourite, had never, for many months, been out of doors alone, nor, indeed, at any time, out of the sight of either himself or his valet, who was also attached to the dog, and had the express care of him when his master was absent. As, therefore, neither of them had ever seen him bitten, they were positive on the subject. Anxious to arrive at the truth where so important a matter was concerned, I commenced a close examination of the other servants, and it was, at length, remembered by the footman, that one morning, when the master's bell rang (during the valet's absence to answer it), this dog accompanied him to the street door, and, while engaged in receiving a message brought, he recollects that the dog went for an instant beyond the door, and was suddenly attacked by a dog that passed seemingly without an owner. Here was an explanation of the apparent difficulty: this dog, there is little reason to doubt, was rabid, and pursuing the usual march of mischief.

The other case was that of a Newfoundland dog, which was constantly chained to his kennel during the day, and suffered to be at large only during the night within an inclosed yard. This dog became rabid, and, as no dog was known to have had access to the yard, it seemed to be an established certainty in the mind of his owner, that he *generated* the disease *spontaneously*. This case I also sifted with great perseverance, to elicit the truth. At length I gained, from the gardener to the family, that he remembered, one night in bed, hearing an unusual noise, as though the Newfoundland dog was quarrelling with another, but which, from the dog's confined situation, made him believe was impossible, and he therefore took no notice of the subject. He also recollects, that, about this time, marks of a dog appeared in his garden, which, on account of the height of the wall, surprised him; and he further remembered, that remains of hair were discovered on the wall which separated the garden from the yard where the dog was confined, but which circumstances, until strict inquiry was made, had excited no attention. About the same time, the neighbourhood, it appeared, had been alarmed by the absence of a large dog belonging to one of the inhabitants, which had escaped from confinement during the night, evidently under symptoms of disease. Here, also, a ready solution of the difficulty occurred;

disposed to attribute the impression made on the relators to want of due inquiry, or to the erroneous information gained from those around. Mr. YOUATT, whose means of observations have been but little inferior to my own, I believe, is decidedly of a similar opinion, as are also many of our most eminent medical characters*; and, although it cannot be denied that there are those who maintain a different view of the matter, yet, without questioning the ingenuity of the arguments on which their opinions mainly rest, it will be found that palpable facts, or well-conducted experiments, have not been the means whereon such opinions have rested†. The

and Mr. GILMAN'S case, on which he finds his opinion of spontaneous rabies, is, without doubt, referrible to a similar want of correct information on the confinement of the animal.

* Among these may be mentioned, Drs. VAUGHAN, HUNTER, and HOULSTON. Dr. BARDSLEY, also, who has examined the subject attentively, in his Reports, states his full conviction that rabies never, in the present day, owes its origin to spontaneous generation, nor to the operation of climate, putrid aliment, excess or deprivation of food or water, want of perspiration, worm under the tongue, or to any other agency save that of infection.

† Much of this discrepancy of opinion originates in our defective nosological distinctions. Spontaneous rabies, in the minds of its warmest advocates, is often confounded with an affection certainly spontaneous, and certainly of a wild and often furious character. This spontaneous animal rabies of some authors, and the spontaneous human hydrophobia of SAUVAGES, may arise from the local irritation of wounds, worms, colics, particularly from lead, &c., or from the general irritations of tetanus, epilepsy, &c., or the excitements of phrenitis, hysteria, gastritis, &c. A disease of this nature may be produced also by the bite of an infurated animal not affected with the specific malady; for it has been long observed, that all animals inflicting a wound by their teeth, when under great mental excitement, are apt to produce local and general symptoms of a peculiar nature, characterised by their severity, probably arising from some morbid change taking place in the salivary juices. Many experiments confirming this have been published by various authors, but those detailed by M. ROSSIN, in the *Mem. de l'Académie de Turin*, tom. 6, are very conclusive on this head. These affections (which confine their effects to the immediate objects) ought to be distinguished from the specific and communicable rabid malady.

It must, however, be allowed, there are authorities who (distinctly se-

favourers of spontaneous rabies have also described the probable remote or primary causes which operate in its production ; among which, *heat* has long been considered as one of the most powerful : but this opinion is not tenable, when it is

parating the spurious from the true) still maintain the spontaneous origin of the present rabid malady. Without noticing the ridiculous surmises of the antients as to the probable origin of the disease, it may be stated, that SAUVAGES, among the more modern authors, favours the opinion of a constitutional generation of the contagious rabies. Even the illustrious BOERHAAVE seems to incline to that opinion :—“Oritur Fere “semper ab aliis animalibus prius rabiosis suscepta contagio ; tamen “et sponte quibusdam orta legitur et observatur.”—Aphorism 1130.

ORFILA is an advocate for spontaneous rabies, not only in dogs, but in many other animals also.

Among our most elaborate writers on this interesting subject, may be reckoned Dr. HAMILTON, who is a decided favourer of spontaneous origin. Not, as he argues, from any specific virus remaining long concealed, but from a new poisonous compound, generated from putrid sordes surrounding the animal when the body is in a particular condition or situation. But, in answer to this, I allege, that I have not unfrequently seen dogs shut up in the midst of every variety of putrid and acrid matter, and in the most confined situation, yet I never saw a case of spontaneous rabies among them. Were this the case, how often must it break out among the dogs of the lower class of dog-dealers and fanciers in London, where hundreds of birds, rabbits, guinea pigs, &c., with every variety of dog, are confined in one small close room, or cellar ? MR. GILMAN, as before noticed, embraces this opinion apparently on the authority of a single case, the correctness of which, as I have already shewn, may be reasonably doubted.

The favourers of spontaneous origin to rabies have inquired, How can the irregularity of its prevalence be accounted for otherwise ? This may be answered, by inquiring how it is that small-pox often rages in a district, and is then, as it were, lost for a time. But accurate inquiry will shew that it never wholly dies ; solitary cases occur one after the other, and, at last, accidental circumstances call it into full action. It is thus that rabies, although it may occasionally take on an endemial or epidemic appearance, yet may always be traced to infection ; and by the same means it is extended and perpetuated. I have often been at the pains, when travelling through various parts of England, to inquire when a mad dog had been seen or heard of, and I never remember to have had it peremptorily stated that one had not been seen or heard of within six months.

known that many countries under the torrid zone are entirely free from canine madness; neither does it appear to gain any accession to its frequency or morbid character in these countries*. We have BURROWS' authority for stating, that it is almost, if not entirely, unknown over the vast continent of South America. In many of the western isles it is a stranger†; and, in Egypt, VOLNEY says he never heard of it. LARREY, BROWN, and others, inform us, that it has never visited the burning clime of Syria. Neither is it more prevalent in cold climates; and although it sometimes visits northern latitudes, it shews no preference for them, and, in Greenland, is said to be altogether unknown. In temperate climates, on the contrary, it is most prevalent, not perhaps owing any thing to an extra-tropical situation, but merely because in such latitudes the most populous countries are usually situated, and in such matters of interest are more likely to be noticed. In the United States of America it is sufficiently frequent‡, and throughout Europe we are but too well acquainted with it.

Seasons have also been alleged as the probable cause of madness among dogs; and though it is wholly a vulgar error, yet the dog-days are supposed by many to owe their name to the prevalence of this malady during the heats of a summer solstice. But a more extended experience and more extensive examination have now rendered it sufficiently notorious that rabies is not more prevalent at one season than at another§.

* It cannot, however, be denied, that heat *accelerates* the individual attack, particularly when conjoined with great bodily excitement. In this way, a dog that has been bitten, but in which the disease might not appear probably for weeks, by taking long and severe exercise in very hot weather, is almost certain to be attacked with it the next day. This I have witnessed in several instances, but in no dog that I could not distinctly trace to have been bitten.

† *Bibliothèque Raisonnée*, 422, Avril, Mai, Juin, 1750.

‡ *Med. Trans. Philadelph.*, vol. i.—*Med. Inquir. Philadelph.*, 1798.

§ Il n'est point vrai que cette maladie soit plus commune pendant les

It has been argued, that peculiarities of aliment, either in quantity or quality, may occasion it. In dogs which have been accidentally subjected to a deprivation of food bordering upon starvation, no rabid symptoms have ever occurred. Repletion has never occasioned it, although it has proved the parent of many other inflammatory affections. Putrid food is not likely to occasion it in predatory animals, whose stomachs must, by nature, be formed to subsist on matter in various stages of decomposition. In Constantinople, and other eastern cities, dogs are the only scavengers; and, at the Cape of Good Hope, BARROW informs us, the

froids rigoureux de l'hiver, ou les chaleurs excessives de l'été, qu'au printemps et en automne.—TROLLIET, 575.

The following table, extracted from the Memoirs of the Royal Society of Paris, shewing the proportions of rabid cases during the several parts of a year, in France, will clearly evince how little season has to do with the prevalence of the disease:—

	WOLVES.	CATS.	DOGS.
January.....	1	1	3
February.....	4	1	12
March.....	6	0	5
April.....	6	1	8
May.....	0	0	16
June.....	2	0	8
July.....	2	2	13
August.....	1	1	8
September.....	1	1	14
October.....	0	2	10
November.....	0	0	8
December.....	3	0	9
	26	9	114

It is not a little remarkable that, notwithstanding the opportunities afforded in every country for observing the contrary, the prevalence of rabies in summer should be universally received. Thus SOMERVILE has,

When Sirius reigns, and the Sun's parching beams
 Bake the dry gaping surface, visit thou
 Each ev'n and morn, with quick observant eye,
 The panting pack. If in dark sullen mood, &c. &c.

Caffres feed their dogs wholly on putrid flesh, and no such disease is seen among them. Abstinence from water is an old and popular supposed cause of madness; but, in India, where, from the drying of the water-tanks, many brutes perish, madness is not observed to be occasioned by it. In fact, in the rage for experiment dogs have been purposely subjected to all these supposed causes, but without having once produced the disease*. It is unnecessary to combat the opinion of Dr. MEAD, and others, that an acrid state of blood, from the want of perspiration in the dog, is a remote cause of madness. Neither have we more reason to suppose that any state or peculiarity of atmosphere can give rise to it, although it may favour the extension and activity of the contagion.

But if none of these causes engender the rabid malady, can we yet attribute the extreme variations in its prevalence at one time in preference to another; its visitation of one district, and its almost total absence from those around it? Can we account for these on the simple principle of contagion†? I readily answer yes, for I think there is little reason to doubt, that, in certain situations, or during certain seasons, circumstances more peculiarly favourable to the germination of the rabid virus occur. In this way, one hundred dogs may be inoculated at one time, and the poison infect only a few of them, while, at another time, a great majority of the number might become rabid. The same circumstances, also, may occasion a more early developement of the disease (as I have already proved with regard to heat and excitement), and in this way increase its prevalence. It may be brought about, likewise, by an occasional or peculiar idiosyncrasy in the ani-

* *Dissertation sur la Rage*, par M. BLEYNIER, Paris.

† If the Great Author of Nature had not, in his mercy, put some bounds to the production and reproduction of morbid compounds, sickness and misery would have been endless. The scourges of rabies, syphilis, small-pox, and many other diseases, are, therefore, although first generated within the animal body, now confined to contagion; and thus we are enabled to avoid their evils by vigilance and care.

mal bodies themselves, all which is in strict analogy with what is daily seen in other contagious diseases.

If, therefore, the disease owes its first origin to spontaneous generation, but the further continuance of it is not effected by this means, what are the immediate animals in which it may be supposed to have thus spontaneously originated? An accumulation of the experience of all ages testifies that the disease more particularly belongs to the members of the genera *canis* and *felis*, but whether to all the species of each genus we are not at present aware. That the wolf*, the dog, and the fox †, become affected, and can communicate the disease, we have sufficient proofs; but whether any other member of the feline genus, except the cat ‡, takes on the communicable rabies, we are not aware. Neither have we any thing more than conjecture to satisfy us, whether, in the first instance, the disease originated in one of these species and was communicated to the rest, or whether all were originally liable to and suffered under a spontaneous origin of

* Fortunately, the ravages of the rabid wolf are unknown among us; but in France, Spain, and Germany, they are but too common. His savage nature makes him, under the excitement of this inflammatory disease, highly ferocious, and he seeks objects of every kind wherein to propagate his own sufferings; and as his size enables him to reach it, so he commonly inflicts his wounds on the face, and thus more certainly insures a fatal issue. The extent of some of these ravages may be gained by reference to ASTRUC Mem. Montpellier, 1819; d'ARLUC Recueil Périodique, tom. 4; BAUDOT Mem. de la Soc. Roy. de Med.; Gazette de Santé du 11 Sep. 1813; Journal de Med., tom. 39; Histoire des Ravages causés par Louve enragée, dans le département de l'Isere en 1817; TROLLIET.

† Although we have sufficient proof that the fox becomes occasionally rabid, yet, either his inherent aptitude to receive it is less than that of the dog, or his solitary habits exclude him from the attack: certain it is, that vulpine rabies is very rare.

‡ That a considerable inaptitude exists in the cat to receive the disease, is also certain, from the fact that dogs, under rabies, seek these animals with an instinctive aversion, and great numbers must by these means become bitten; yet a rabid cat is comparatively a rare occurrence. When rabies makes its appearance in the cat, it shews itself with much of its mischievous character.

the complaint *. As these animals, already particularised, are those only in which the inherent aptitude to a spontaneous origin of rabies is appropriate, so it appears, from the concurrent testimony of experiment and observation, that they only are capable of *communicating* the disease. In all others, the inherent aptitude for spontaneous generation of it, as well as the power of reproducing it, are wanting, and confined to a capability of *receiving* it by inoculation†. Our

* *A priori*, the rabid malady would appear most likely to be generated within the carnivorous constitution, and, also, that its specific character of communicable quality should be confined there. The morbid compound is there chemically elaborated, and readily finds a nidus for its germination. A septic tendency in animals who live on flesh, we are fully aware, gives rise to peculiar diseased combinations at first highly inflammatory, and, next, assuming a putrid and infectious character.

† Opinions, however, vary on this point, and discordant facts are quoted that tend to increase the difficulty of arriving at the truth; and, although my own opinion decidedly leans to an incapability of communicating rabies by any animals except the members of the canine and feline genera, yet candour requires that every thing should be stated that has weight on either side of the question. It was long a popular bugbear, that the bite of a *human* person, or the application of the saliva of one labouring under rabid hydrophobia, to an abraded surface, was capable of producing the disease in another **. Analogy and more extended experience gradually taught us to think otherwise. The Drs. VAUGHAN and BABINGTON submitted the matter to a course of rigid experiment; but, although they inoculated dogs and other animals, I believe, with every caution to render the experiments complete, yet they both wholly failed in producing it. A similar result has followed similar experiments by Dr. ZINKE, and others, who extended the trial to horses, asses, kine, sheep, and pigs, but which all escaped unhurt. However, if we are to credit the testimony of Messrs. MAGENDIE and BRASSLET, as detailed in the *London Med. Repos.*, vol. iv, p. 35, there is a possibility of reproducing this disease in the quadruped by inoculation with virus secreted in the human system. The following account of

** It is noted, by more than one author, that a mother has continued to kiss a hydrophobic child incessantly, without hurt; and as we know that the saliva, in such cases, is ejected with force, surely she could not escape without being subjected to some danger, were the human saliva infectious.

next object is, therefore, to inquire what animals are thus capable of *receiving* the rabid malady by communication. Our own experience and authenticated written accounts teach us that man, the horse, the mule, the ass, neat cattle, the sheep, the goat, swine, the bear, the remaining members of the feline genus, hares and rabbits, are all of them liable to it. Occasional mention has also been made of other animals, and, from analogy, we are not warranted in concluding the accounts untrue*. The feathered tribe have been long sup-

the experiment is extracted from another source: — “ A l'Hotel-Dieu de Paris, le 19 Juillet, 1813, MM. MAGENDIE et BRESCHET, prirent de la salive avant la mort du nommé Sarlu (dans les veines M. DUPUTREN injecta d'abord deux grains d'opium, puis quatre, ensuite huit grains dissous dans l'eau distillée); ils transporterent cette salive à vingt pas de sonlet, à l'aide d'un morceau de linge, et en inoculèrent à deux chiens biens portans. L'un d'eux devint enragé le 17 Juillet, et en mordit deux autres, dont l'un étoit en plein rage, le 26 Août; ce qui porte à croire, que l'homme peut transmettre cette terrible maladie.” (*Dissertation de M. Ch. Busnout*, Paris, 1814, p. 27). But, when it is considered that this experiment is in direct contradiction to so many others, conducted with equal care, its evidence can only be viewed in a doubtful light.

With regard to a capability in other animals to communicate rabies, still less weight is attached to the supposition, although this also has its advocates. Were we to give credence to the vague accounts handed down to us by persons who took no pains to examine into the truth, we might believe M. BACCIUS, who mentions a gardener who died hydrophobous from the bite of a rabid cock, or M. DUPLANIL's account of a similar event occasioned by a rabid horse**. It is also on record, that the otter has communicated the disease; but it is more than probable that these, and similar statements, are all of them founded in error, and we are enabled to oppose to them the authority of the celebrated HUZARD, who has been at great pains to arrive at truth with regard to this subject. He asserts, that herbivorous animals do not communicate the disease, but the carnivorous only; and that all the experiments made by himself, or gained from others, had failed in producing it.

* BOERHAAVE describes it as occurring in the monkey (*Aphorism 1132*).

** Mr. Stevenson, of Norwich, was bitten by a rabid horse, but suffered no inconvenience. — Parry, p. 187.

posed to be capable of receiving it, and some late experiments seem to confirm this opinion *.

Having endeavoured to satisfy ourselves what animals are capable of *communicating* the rabid malady, and what are able to *receive* it only, we will proceed to inquire the mode by which this morbid communication is effected between them. We have abundant evidence that this disease is produced by the insertion of a poison diffused through the saliva of certain animals when labouring under rabies, and which insertion is usually effected by means of a bite †. That the

* Dr. ZINKE, of *Jena*, produced rabies in a cock by inoculation with the saliva of a mad dog.—VALENTIN, *Lettre sur la Rage*, *Journ. de Med.* vol. xxx.

† In a voluminous work before mentioned, written by a Mons. TROLLET, it is attempted to prove, that the rabid virus is not generated within the salivary glands, neither is the saliva the vehicle of the contagion. On the contrary, the frothy slime or slaver (*bave écumueuse*), furnished by the bronchial surfaces, alone contains it: but as this is a new view of the subject, and propagated by an author of respectability and talent, I shall present his aphorismal summary of it:

Propositions Aphoristiques: 1. "La salive n'est point le véhicule du virus de la rage. 2. Les gland salivaires ne présentent ni douleur dans le cours de la maladie, ne traces d'alteration après la mort. 3. La bave écumueuse est étrangère à la salive; elle vient des voies aériennes. 4. La membrane muqueuse des bronches est le siège d'un inflammation spécifique; elle produit le virus de la rage, comme la membrane muqueuse de l'urètre inflammée produit le virus de la blenorragie syphilitique."—*Nouveau Traité de la Rage*, p. 673.

‡ This idea of the origin of the rabid malady is as old as the disease itself. In antient times, particular families or tribes (the MARI and PSILII, Africans, who practised at Rome, were of this kind) enjoyed the privilege of drawing out the poison in these cases by suction with the mouth.—(PLIN. *Hist. Nat.* lib. vii.) ÆLIANUS, *Hist. Animal.* lib. i, chap. 51; LUCAIN *Pharsal.* lib. ix, v. 891.

It was also an opinion entertained by many among the antients, that the salivary secretion alone contained the seeds of the disease. Among the moderns, SALIUS DIVERSUS, PONTEAU, DUCHOISEL, BAUDOT, BONNET, MORGAGNI, LIEUTAUD, are neighbouring authors who have signalized themselves by their researches in this interesting subject, and they all maintain the same, and cite numerous facts to prove, that neither by

saliva is the only secretion capable of producing this effect we have reason to believe, not only from an immense mass of analogical testimony afforded by our own observation and that of others, but also by the more conclusive evidence of innumerable experiments made in this and other countries with the other fluids of the body, all of which failed to produce the disease ; neither have we any reason to suppose that the solids become more affected with the *materia morbi* than the

the solids, or by any of the fluids, save the saliva alone, can the contagious rabies be generated.

This opinion I consider materially strengthened by the circumstance of having several times scratched or cut myself accidentally with my scalpel, while examining the dead bodies of rabid dogs, and from which no ill consequences resulted, although I never did more (and not always that) than wash the wound with a little spirit. M. DEVALAY, of *Verdun*, wounded himself under similar circumstances, and, without any precautions being taken, he experienced no ill effects from it. A similar instance is also related in the *Transactions of the Royal Society of Paris*, 1783. As a further proof, also, that the whole of the fluids, as well as the solids, of the trunk of the body are wholly incapable of disseminating the disease by the closest intermixture, the *Memoirs of the Royal Society of Medicine of Paris* for 1783, p. 333, may be quoted, which contain an authentic account of an infant extracted from the womb of a hydrophobous woman in the eighth month of her pregnancy, which child lived, and was reared.

As a proof of the inherent capability of the morbid salivary secretion to produce rabies, the experiments of Dr. ZINKE, of *Jena*, afford conclusive evidence. A dog, inoculated in the fore legs with rabid salivary virus, and to which belladonna was daily given, died on the eighth day. Another, who was inoculated with morbid saliva, mixed with a strong solution of arsenic, wholly escaped ; while a cat, inoculated with the same saliva, diluted with a tincture of cantharides, became rabid nine days after. A rabbit was inoculated with a mixture of rabid saliva and volatile alkali ; it died on the eleventh day. Another, inoculated with virus and human saliva, escaped disease. A dog, inoculated with the same morbid saliva, mixed with a diluted solution of phosphorus, although he became sick on the fifth day, nevertheless escaped infection. A cock, inoculated with the same saliva, mixed with some of the gastric juice of a cat, died on the fourteenth day.

fluids *. We are, nevertheless, constrained to admit that there are respectable authorities who, on the contrary, maintain an opinion that various other agencies besides the mere saliva may operate in producing the disease †; among whom, Drs. HAMILTON and BARDSLEY stand conspicuous: these gentlemen entertain a notion that the infection may be received in a state of vapour either through the pores of the skin, or by inhalation, or by both ‡. Others conceive it possible that it

* La chair, le sang, le lait et les humeurs de l'animal enragé, ne communiquent point la rage.—TROLLIET, p. 576.

† Among the antients who ranged under this head, the names of DISCORIDES, GALEN, and MATHIOLUS, appear: while, among those of later date, we find the respectable authorities of BOERHAAVE, VAN SWIETEN, HOFFMAN, and SAUVAGES; and were we to believe the accounts that credulity and ignorance have handed down, we might indeed extend the infectious process to an interminable end. FERNEL, with great gravity, relates, that some hunters, having killed a mad wolf, were imprudent enough to eat a part of him, and were all attacked with rabies, although he owns that some of them recovered.—(*De abd. rer. caus.*) SAUVAGES, on the authority of one SCHENKIUS, speaks of an aubergiste, who, serving some of his guests with pork of a rabid swine, occasioned hydrophobia in them all: it seems the infection was so subtil, that it did not wait until their departure, but they were immediately attacked.—This is wholesale dealing!

‡ Elaborate as is the work of Dr. HAMILTON, its hypotheses are chiefly founded on argument and theory. The Reports of Dr. BARDSLEY are drawn with care and ingenuity; and, in support of his opinions, he details some facts which give colour to his arguments, but, unless these facts should be followed by many others of the same nature, and unquestionably authentic, they will avail little towards overturning the contrary opinions above stated, which are supported by still longer experience, more extensive observation, and a wider range of experiment. The immediate fact on which Dr. BARDSLEY grounds his opinion relative to the capability of receiving rabies by means of infected vapour, was gained from Mr. TREVALYAN's experiments. This gentleman, after losing almost a pack of hounds by madness, was led to suspect that contagion might lurk in the surrounding materials of his kennel. The litter was carefully destroyed, the benches were sealed, the joints, crevices, &c. were painted, and the walls white-washed; the pavement was also

may make its way into the constitution through the medium of an epithelium, or mucous surface, as that of the nostrils, lips, or eyelids*; and with still less probability or fact to support their theory, some suppose that the surface of the skin throughout is capable of being penetrated with the poison by the simple application of it to the unabraded surface. A very few only have been led into an opinion that it was possible for the rabid virus to enter the circulation through the medium of matters taken into the stomach †. But, however

scalded: nevertheless the rabies again appeared. Mr. TREVALYAN was now more than ever convinced that some subtle contagion lodged concealed within the apertures of the benches or pavement; the whole was therefore removed, and the edifice was again white-washed and painted, after which no rabies appeared. Puzzling as this appears to one who argues that no contagion can lurk thus unseen, and be generated by inhalation, it may yet be satisfactorily accounted for by another statement, equally true, that fell under my own immediate cognizance. I was requested, in 1821, by Mr. YATES, of *Tring Park*, to examine two servants, a huntsman and whipper-in, who had been bitten by a hound evidently rabid. I cauterised the wounds many days after the accident, and neither of them felt any future inconvenience from the accident. Three or four of the hounds had already become rabid in succession, and it was proposed to destroy the remainder; to which I objected, and recommended that a minute examination should be made of them individually every day. Every now and then, however, for months afterwards, an individual was attacked with madness, and, at length, the whole were destroyed, and Mr. Y. procured a *new pack*, which have never become affected, although living in the same kennel, without any precautions having been made use of to prevent latent contagion.

* On the authority of Dr. PERCEVAL, Dr. BARDSLEY tells us of a man, who, during his sleep on the ground, was licked about the mouth (but not bitten) by an infected dog. He was seized with hydrophobia, and died of the disease: but this case, it should be remembered, was always considered questionable.

† PALMERIUS states, that he was an eye witness to the death of several horses and cows which had eaten the litter on which some rabid swine had lain. But we need not wonder at so gross an error having been transmitted to us by former authorities, when we find Dr. PARRY (who appears particularly in the character of a critical arbiter between what is erroneous and true on the subject of rabies, as well symptomatic as

cogent may be the arguments made use of to support these theories, and however specious may be the appearances of a few isolated facts in their favour, when weighed against the vast body of evidence and the numerous experiments collected from authorities the most imposing, they operate little or nothing against the conviction, that the saliva of a rabid animal, and the saliva only, is capable of exciting hydrophobia in man, or madness, as it is called, in other animals.

Having thus traced the rabid poison from its rise and origin to its insertion into the animal body, let us now proceed to inquire, what are the chances that it will prove baneful; what time usually intervenes between its insertion and active operations; and, when so acting, what are the symptoms it produces, and what its supposed modus operandi?

It is fortunate, that, out of the numbers bitten by a rabid animal, many escape without infection. A variety of circumstances may tend to this favourable issue, among which may be reckoned the intervention of substances between the biter and the bitten; as the wool of sheep, and the thick hair of some dogs *. Another cause occasionally operates, in

specific) perpetuating an account like the following:—"A farmer, in my "neighbourhood, lost a cow by the black water and yellows, that is, a "disease with jaundice. This cow he gave to be eaten by his pigs, "consisting of a sow, and three pigs ten months old, and five of two "months. Within two or three weeks afterwards, one, which was ten "months old, *and the master pig, and which had therefore eaten more "than either of the rest*, became furiously mad," &c. What became of the mistress pig? One would suppose that the old lady would have had her share. Of what weak materials even great men often build their theories!

* In the human subject, there is reason to suppose that the interposed dress wipes the saliva from the teeth, and saves many who would be otherwise fatally inoculated. But, independent of this, there appears to be much less constitutional liability in the human subject to receive the rabid contagion than exists in the brute. Out of twenty persons, bitten by one dog, Mr. HUNTER informs us (although no prophylactics were employed), one only became hydrophobous. Dr. VAUGHAN relates, that between twenty and thirty persons were bitten by another dog, out of which number also one only was infected. If it were, however, pos-

my opinion, very powerfully to prevent the contagion from being received, which is a peculiar inaptitude in the animal body to receive the rabid poison at some times more than at others, dependant probably on a constitutional idiosyncrasy generated within, or gathered from, the operation of external circumstances, as peculiarity of situation, variations in temperature, qualities in aliment, &c. &c. Not only do facts coincide with this opinion, but it is impossible otherwise to account for the epidemial as well as endemial character which the rabid malady sometimes assumes.

The intervening time between the inoculation by the rabid bite and the appearance of the consequent disease, is very variable. In the majority of instances, the effects appear between the third and seventh week. Cases, however, do now and then occur, where they have been protracted to three, four, or even a greater number of months. Although, therefore, caution should not be lost sight of, even after eight weeks have elapsed, yet the danger may be considered as inconsiderable after that time. A week is the shortest period I have met with between the bite and rabid appearances *.

sible to credit the accounts of the ravages of wolves, we might be led to believe that a superior degree of certainty attended the contagion when received from them. Mons. TROLLIET relates that, of twenty-three persons bitten by a wolf, thirteen were infected with the disease. In the *Mem. de la Soc. Roy. de Med.* p. 122, mention is made of two human persons, with many horses and cows, being bitten by a rabid wolf, in September 1772, and that every one of these became affected. BAUDOT, also, gives an account of no less than forty oxen, cows, horses, dogs, &c., bitten by a mad wolf, in the month of June 1765, the majority of which died. I might multiply these instances handed down to us by the industry of collators, but the authorities are, in general, so dubious, that they should be received *cum grano salis*. It, however, may be admitted, that as the wolf usually attacks the face, which is not only uncovered, but, it is probable, is more certainly and more quickly acted on than other parts of the body, so, in this way, greater danger may arise from the rabid wolf than the rabid dog.

* In the human subject, if an average can be taken in so variable a matter, we may consider, that from thirty to fifty days between the bite

I am fully persuaded, that accidental circumstances also have some influence in determining the time of the attack, from repeatedly seeing it follow directly after any great excitement, as that of travelling, particularly in hot and dry weather. The oestrus of bitches favours the approach; and, in fact, whatever tends greatly to accelerate the circulation appears to produce a more early developement of the disease. The *certainty* of the attack is also, I have reason to believe, greatly *increased*, as well as *hastened*, according to the part bitten. I have very seldom known any animal escape which was bitten in the head or face; and I have, in almost every instance, observed less time to intervene in these cases than in others bitten elsewhere. This circumstance is further confirmed by the experience of other French and English authors.

Symptoms of Rabies.—I shall now proceed to describe the *pathognomonic* and *occasional* appearances of the rabid malady, premising that the varieties in both, but particularly in the latter, are so numerous, that hardly any two cases present themselves under a directly similar aspect. It is however certain, that, by the aid of the *pathognomonic* symptoms, the disease may be always detected without fear of mistake. The extent of the former, and the necessity for a distinct

and hydrophobic symptoms will include the greatest number of cases. Instances, however, occur, where the period is extended much beyond this average. One of Dr. PARRY's cases was seven months; Dr. MEAD met with one of eleven months. GALEN has informed us of one of twelve months. In the Phil. Trans. of Paris, No. 445, a case is detailed, by M. NOURSE, occurring after fifteen months. Neither is there any reason to doubt the authenticity of any of these statements; but what are we to think of the case related by CÆLIUS AURELIANUS, which took place after seven years; of SALMUTH's, after eighteen years; and of that met with in the *Ephemerides des Curieux de la Nature*, “*l'histoire d'une femme qui devint hydrophobe que vingt ans apres?*” which are, however, all outdone by DODONÆUS, who, in *Obs. Med.*, chap. xii, speaks of hydrophobia occurring thirty years after the bite. To these we may reply—*credite vult!*

notice of all the varieties of the latter, render a perspicuous account of the disease extremely difficult, and necessarily extend it beyond the limits of a summary.

Rabies, or Madness, commonly commences with some peculiarity of manner, some departure from the ordinary habits, or by the introduction of new ones. In many instances, but more particularly in the smaller and closely domesticated kinds of dogs, this peculiarity consists in a disposition to pick up straws, thread, paper, or other small objects *. In others, the first symptom noticed, is an eager and unceasing attempt to lick the anus or parts of generation of another dog†. The lapping of their own urine is a common and early symptom of madness, and one that should be particularly inquired for, and, when it is found to exist, I know of none that should be regarded as more strongly characteristic of rabies, and of no other complaint. Some dogs shew an early disposition to lick every thing cold about them, as iron, stone, &c. These, and other peculiarities, often appear in dogs under immediate observation, one, two, or even three days, before the more decisive and active symptoms. The eyes, in this early stage, are, in some cases; rather more bright, lively, and red than usual; but, on the contrary in others, and more particularly when the disease is to assume the mild form, called dumb madness, they often present a dull aspect, and a purulent discharge. In the wild or raging madness, both the eyes and nose, sometimes, also discharge a purulent moisture, which has occasioned these cases to be sometimes mistaken for distemper. Much stress is laid on a sullen manner and disposition to hide or retreat from observation, as

* I have repeatedly seen dogs, which, before they became at all suspected of madness, had for a day or two industriously employed themselves in this way, so that not the smallest loose object of any kind remained on the floor, to the no small surprise of the owners.

† In one instance, I foretold the approach of the disease by the uncommon attachment of a pug puppy to a kitten, which he was continually licking, as well as the cold nose of another pug that was with him.

early characteristics of madness ; and these appearances are certainly not unusual in hounds and kennelled dogs, but they are less frequently observed in the smaller kinds, or in such as live within doors, and are more immediately about our persons *. Costiveness is not uncommon in the incipient stage ; in the latter it is still more frequent. An early sickness and vomiting often appear, but although ineffectual retchings may continue, actual vomiting does not often accompany the complaint through its progress ; the peculiarity of the inflammation in the stomach rather tends to retain the ingesta within it. Indeed, this circumstance forms one of the strongest criteria of the existence of the disease, as will be hereafter noticed.

It is not unusual for one of the first symptoms to be that of continually licking, or violently scratching, some particular part of the body. A close examination of such part will frequently detect a scar, or the remains of the wound by which

* I have great reason to think that much of the discrepancy we meet with in the various accounts that appear relative to rabies, arises from the confined field of observation from whence they are drawn. One gives a detail of rabies as it has appeared in one or two individual cases that accidentally fell under his notice ; another describes it as it is found to exist among hounds, pointers, or other large dogs only ; and a third draws a portrait of it as it shewed itself among the smaller and confined dogs in close domestication ; and yet each (not considering that original character and habit stamp a still further variety on a disease already sufficiently variable) expects all future cases exactly to coincide with his own statement, or that they should fully bear him out in his own views of the subject. In the larger breeds of dogs, and particularly in kennelled ones, as hounds, &c., where close domestication has not wholly reclaimed their native ferocity, rabies may, and indeed does, shew itself with much of that wildness and mischievous character that has gained it the name of *madness*. The rabies of the wolf and fox, although close congeners of the dog, and that likewise of the half-reclaimed cat, is always stamped with a ferocity and malignancy of character that is foreign to what usually occurs in the smaller and more domesticated breeds, in which cultivation has wrought such an entire change of their nature, that even their symptomatic appearances under disease are, in a great degree, altered by it.

the poison was received ; and when the former wound cannot be found in this way, if a true history of the case can be gained, it will always be found that the inoculation was received on the part so scratched or licked ; and I have reason to believe that this morbid sympathy in the bitten part exists more or less in every case *. The appetite is by no means always affected in either early or continued rabies ; on the contrary, food is not only eaten, but digested also, during the first stages ; and some will eat almost to the last, but with them the food is seldom digested. That no disinclination to liquids exists, will be readily acknowledged by all who observe the disease with only common attention : from the first to the last, no aversion to water is ever observed. In the early stages, liquids are taken as usual, and some continue to take them so throughout the complaint ; others cannot, from a swelling and paralysis of the parts of deglutition, readily swallow them in the advanced stages, but, in such, no spasm is occasioned by the attempt, nor does it occasion pain or dread ; on the contrary, from the heat and thirst occasioned by the fever, water is sought for, and, in most cases, an extreme eagerness is expressed † for it. The

* I have seen a dog which had been known to have been bitten in the foot, some weeks afterwards begin to lick the part, at first gently, then violently, incessantly whining over it, as though distressed with the sensation produced, until, at last, he has proceeded actually to gnaw it. I have witnessed the same thing happening to other parts, as the lips and ears, which have been rubbed or scratched with anxious perseverance from the beginning to the end of the complaint, when the rabid bites have been received there.

† Perhaps a greater instance of pertinacity is not on record than that which marks Dr. PARRY's treatment of the various testimonies to this fact. Although these testimonies are given by authorities equal to his own, and by those whose opportunities for observation, and habits of improving them, rendered them worthy of implicit confidence ; yet to establish a visionary and short-lived theory, and notoriously without one authentic fact to support him, he has, in the most unfair and illiberal manner, endeavoured to weaken the credibility of them, and, by arguments the most weak and futile, has attempted to prove, that, of necessity,

experience of more than twenty years, I again repeat, has never produced one instance where any thing like spasm was present in the throat, and where a consequent dread of swallowing, or pain from the attempts to do it, appeared in the slightest degree.

An early and marked alteration of temper usually presents itself, and this so generally as to form a distinguishing feature

dogs must also be hydrophobous, because the human subject is so. His dictum on this matter he considers sufficient to overturn all the collected facts which go to prove the direct contrary; and the whole of this otherwise ingenious production is a lamentable proof to what even great minds will stoop when a favourite point is to be established.

Mr. MEYNELL expressly says, mad dogs have no abhorrence or dread of water, and that they will eagerly lap it even the day before their death. He also notices the paralysis that often renders their attempts to drink abortive.

Dr. JOHN HUNTER, who was not accustomed to state facts without examination, says, that "mad dogs can swallow solids and liquids through "the whole disease."—*Trans. of a Soc. for the Improvement of Medical Knowledge*, p. 296.

Dr. HAMILTON also says, "A rabid dog never avoids water, and laps "whatever liquid food is set before him, long after the poison can be "communicated by his bite."—*Remarks on Hydrophobia*, vol. i, p. 12-16.

In a case of rabies, related by Mr. YOUATT, he says, "On the fourth "day, he not only eagerly *lapped* milk and water, but readily *swallowed* "it."—*Med. and Phys. Journal*, vol. xxxi, p. 231.—In another case, he observes, "On the third day, though his thirst was excessive, and he "plunged his whole face in water, yet he could not swallow: but he "was not prevented by spasm; the cause was purely mechanical." A third case states, that "the dog ate and *drank* heartily before his "death."—See *London Medical Journal*, and *London Repository*, Cases 2, 3, and 5.

"*Cette chienne, avoit vu et mangé après avoir mordu.*"—*Journal de Médecine*, vol. xxxix.

"*Le loup mangeoit tranquillement une chèvre, et celui de Fréjus "traversa plusieurs fois de grandes rivières à la nage.*"—*Voy. d'ARLUC, Recueil Periodique*, vol. iv.

"*Il est donc dangereux de concleurer de ce qu'un animal voit et mange "et traverse une rivière qu'il n'est point atteint de la rage.*"—*TROLLET, Nov. Trait. de la Rage*, p. 276.

of the complaint. Some instances certainly occur in the lap-dog breeds, where no alteration of temper whatever appears, but these cases usually belong to that variety of the disease called dumb madness. In all others, a marked difference in temper may be usually observed early in the complaint, which, at first, consists rather of a pettish irritability than any settled mischievous tendency ; and with few exceptions, a peculiar impatience of restraint is manifested. The first offensive symptoms are often directed towards cats, while dogs remain unmolested. Next, however, dogs, particularly strange ones, are attacked, but those they are acquainted with are still safe ; and as the complaint gains ground, even these are not spared.

As the disease advances beyond the immediate attack of these precursive symptoms, it assumes a more marked character. It either, by its immediate communication with or direct attack on the sensorium and organs of respiration, produces increased excitement of manner, quickness, and irritability ; or otherwise, by confining its specific inflammation more particularly to the bowels, it appears under a milder character of diminished energy and of more patient suffering. These two leading varieties in the complaint have given rise to the distinctions known among sportsmen, of *raging* and *dumb* madness. But attention to the following description will shew that the symptoms that might be supposed peculiar to one are so often blended with the other, that it is impossible to separate them with nosological accuracy ; for as the distinctions that really belong to the disease are the effects of the difference of parts principally attacked by the morbid inflammation, or, in other words, as the specific attack may be more immediately confined to the cerebral, thoracic, or abdominal viscera ; and as it is not uncommon for all these parts to partake of the affection, sometimes in equal, and, at others, in unequal degrees ; so we can easily understand how the principal symptoms which characterise these two varieties may be blended in the same subject. For the convenience, however, of noting such features as are in many cases companions, I will proceed with each variety sepa-

rately, but not without again observing that the distinction is one of convenience rather than of fact, inasmuch as that no one character which is observed to appear in one of the varieties but is occasionally seen in the other also.

*Raging Madness**, as it is called, is that state of increased excitement and irritability which often begins to shew itself immediately after the precursive symptoms. Sometimes these precursors are passed over unnoticed, and it is therefore supposed that the animal is at once attacked with the appearances that follow. It is, however, very seldom that these present themselves in any considerable degree at once. Those already described usually appear as monitory ones, and therefore greatly lessen the danger that arises from mad dogs. This variety of rabies, called the *raging*, shews itself by a general quickness of manner, sudden startings, great watchfulness, and a disposition to be acted on by sudden impressions, as sudden noises, the appearance of a stranger, &c. This watchfulness, however, often yields to a momentary stupor, and inclination to doze. The dog breathes quick, sometimes the panting is excessive, and where the pulse can be examined it is invariably found hard and very quick. The irritability in these cases is marked by great impatience of controul; and even when no aptitude to attack or act offensively towards those around may appear, yet a disposition to resist any offence offered commonly shews itself. A stick held to such a dog † is sure to excite his anger, even from

* It is a curious fact, but it is no less true than curious, that the rabies of very young dogs is always of this kind. I never saw a rabid puppy that did not exhibit marks of considerable delirium and much mischievous tendency towards every living being indiscriminately. That affection of the throat, and paralysis of the parts of deglutition, producing *dumb madness*, I never met with in any but an adult dog.

† This disposition to become irritated on the slightest shew of offence, is, I think, a very strong and almost *invariable character* of the complaint, and it accompanies not only this but the dumb or milder variety in most instances also. I cannot say I have never seen cases without it; occasionally, the paralysis, stupor, and weakness so benumbs the facul-

those he is most fond of, and he will sieze and shake it with violence: the same will happen if the foot is held out. Besides this resistance displayed, a peculiarly treacherous disposition, already hinted at, is a common feature of this variety of the complaint, and is often present in the other also. Without any warning, and often in the midst of caresses apparently received with pleasure, he will at once turn and snap at those noticing him; or he will readily come when he is called, and with every mark of tractability will wag his tail and seem pleased, but, on a sudden, he will seem to receive a counter impression, and hastily bite the person who called him. This stage is also marked, particularly in larger dogs, with an utter fearlessness of danger and contempt of every menace. Every restraint is most unwillingly submitted to; he shakes his chain with extreme violence, and, when confined without one, he attempts to gnaw his way out. The vessels that are placed before him he overturns or breaks.

Every variety of rabies begets a disposition to rove, but as, in the dumb kinds, the paralysis, stupor, and prostration of strength are hindrances to it, so it is more particularly apparent in the raging variety. This disposition shews itself by no attempt to escape altogether, neither does it appear a delirious affection; on the contrary, much method is displayed in it, which makes it rather seem an instinctive disposition common to all to propagate the disease. In its early stages, before the strength is much impaired, dogs will travel immense distances under this impulse. Such a dog trots along, and industriously looks out for every other within his reach or sight. Whenever he discovers one, little or large, he first goes up and smells to him, in the usual way of dogs,

ties, that even this shew of resistance is wanting: but these instances are comparatively so rare to those wherein it is otherwise, that I cannot impress it too strongly on the notice of those concerned, that, when a dog, otherwise mild and inoffensive, immediately flies at a stick held towards him, particularly by those he is acquainted with, such a dog may, without hesitation, be pronounced rabid.

and then immediately falls on him, generally giving him one shake only; after which, he commonly trots off again in search of another object. The quickness with which this attack is made very frequently surprises the bitten dog so much, as to prevent his immediately resenting it: but nothing is more erroneous than the supposition, that a healthy dog instinctively knows a rabid or mad one. I have watched these attacks in numerous cases, and I have seen the mad dog tumbled over and over, without the least hesitation, by others that he had attacked.

During this march of mischief, rabid dogs very seldom, however, turn out of the way to bite human passengers. Neither do they often attack horses, or any other animals but their own species. Sometimes they will not go out of their line of march to attack these even; but, trotting leisurely along, will bite only those which fall immediately in their way. In other cases, however, where the natural habit is irritable and ferocious, and where dogs may have been used to worry other animals, as bull dogs, farmers' dogs, terriers, &c., a disposition to general attack is sometimes apparent; and by such, horses, cows, sheep, pigs, and even human persons, are all indiscriminately bitten.

When a rabid dog has roved about for an indeterminate period, as ten or even twenty hours, he will return home quietly, if not discovered and destroyed in his progress; which, in cities and large towns, he seldom is. But in the country it is different, and, therefore, this peculiarity has not an opportunity to shew itself; for there the unfortunate animal is soon detected by the peculiarities of his manner, and is immediately hunted. If not overtaken, he is too much alarmed to return soon; and, before he has time to recover his fright, he is discovered in some other situation, and falls a sacrifice to the anger of his pursuers. The very hunting will, of course, do to him what it would to any other dog; it will beget fury: otherwise there would very seldom be much ferocity apparent, and, in most instances, such a dog would return home when thoroughly tired.

The *voice*, also, in every variety of rabies, usually forms a strong characteristic of the complaint. In the irritable variety, the alteration is first observed by a more quick and hasty method of barking, with some difference also in the usual tones of the bark; by degrees, an occasional howl either mixes with the bark, or takes place of it altogether*. This howl, which is common to both varieties of the complaint, is of so peculiar a kind, that it may be said never to be heard under any other circumstance than from a rabid dog. It usually consists of a single howl, repeated at uncertain intervals with the head held up †.

Dumb Madness forms the other and most frequent variety in adult dogs, and which cases appear dependent on a less degree of sensorial excitement, but with more morbid affection of the bowels. The symptoms are, a dull, heavy, and distressed countenance; and as the disease advances, the mouth presents an appearance of inability to keep it closed. As the whole of the pharynx and larynx become tumefied, the muscles at the base of the tongue, and those of the lower jaw, become to a certain degree paralyzed, by which the jaw drops and the tongue hangs pendulous without the mouth, and an actual inability to close the jaws takes place. A congestion of blood is the necessary consequence of the tumefaction of the parts, and the tongue from this cause appears commonly, in these cases, livid or almost

* It is evident, that it is not easy to form a written description of any peculiarity of voice, but the rabid howl may not unaptly be resembled to the tones produced by what is called, among sportsmen, the *giving tongue* of the old heavy southern harrier. It appears composed of something between a bark and a howl, being made up of tones longer than the one and shorter than the other. It is, however, so peculiar, that, when once heard, it can never be forgotten, and so characteristic, that it may be almost implicitly relied on. I have, in several instances, been attracted to houses where dogs have been confined by the sound alone, in time to warn the inhabitants of their danger.

† BOERHAAVE seems to have this howl in view, when he says, "muti "quoad latratum, murmurantes tamen."

black, particularly towards its apex or point: sometimes a black line extends through its whole length. The paralytic affection of the muscles extending to the oesophagus, occasions a difficulty and sometimes a total inability even to swallow either liquids or solids. In general, however, the inability does not extend so far, but is principally confined to liquids, which are, in such instances, returned as fast as they are lapped, from the incapacity of the pharynx to retain them; but in no instance do the attempts to swallow appear to excite apprehension or give pain. The mouth itself is sometimes parched and dry, at others it is moist, and a viscid saliva continually flows from it. The tumefaction of the pharynx occasions a deep choking kind of noise, which sound seems to issue from the bottom of the glottis. In this dumb or milder variety, a spasmotic and paralytic affection often extends also to other parts: in some cases, the whole body becomes affected with it. Others have it only in the loins and hinder extremities. When the morbid affection acts very strongly on the bowels, it often occasions the hinder parts to be drawn forward by a species of tetanic spasm toward the fore parts, so as to bend the poor sufferer into a circle; sometimes it fixes the animal on his rump, upright. In other cases, convulsive twitches, like St. Vitus's dance, are not unfrequently observed.

A symptom common to this variety, and not uncommon in the other also, is a disposition to carry straw, or whatever litter the dog can get, about in the mouth, which he appears to make a bed of, frequently altering it, pulling it to pieces and again removing it. It is also very common to observe them scratch their litter under them with their fore feet, not as they do when making their beds, but it is evidently done to press the straw or litter to the belly. This peculiarity appears to arise from some particular sympathy with the intestines, which, in these cases, are always after death observed to be very highly inflamed. These cases are also remarkable for a disposition to pick up and to swallow, when not prevented by the affection of the throat, indigest-

ible and unnatural substances, selected from whatever is around them, and which the costiveness usually present tends to retain within the body. It appears to be this impulse, likewise, that leads rabid dogs to gnaw boards, or whatever is within their reach; and this aptitude may be considered as common to every variety of the complaint, except where the tumefaction and paralysis of the throat are so extreme as altogether to prevent it.

The irritability attendant on dumb madness is even subject to more variation than in that called the raging. It is sometimes extreme, and occasionally exhibits all the treachery and mischievous disposition that marks the other; but when the dumb character is strongly marked, there is then seldom much irritability or delirium apparent; on the contrary, in many instances, a most peaceable disposition is manifest, and which does not appear dependent on the inability to bite, but really from a total want of inclination to it. Indeed, in many cases of this kind, the tractability of character and mildness of disposition have appeared to be even increased by the disease, and that to a degree that will not permit strangers to suppose it possible for rabies to be present. It would sensibly affect any one, to witness the earnest imploring look I have often seen from the unhappy sufferers under this dreadful malady. The strongest attachment has been manifested to those around during their utmost sufferings; and the parched tongue, as I have before noticed, has been carried over the hands and feet of those who noticed them, with more than usual fondness. This disposition has continued to the last moment of life, in many cases, without one manifestation of any inclination to bite, or do the smallest harm. I have observed this particularly in pugs, as well as in other lap dogs*.

* It may be supposed, that I have dwelt on the subject of the temper in madness more minutely than is requisite; but I have been induced to do so, to reconcile the seeming contradictions implied, to guard the unwary against surprise, and to ease the unhappy from unnecessary dread

The *termination* of the complaint is invariably fatal, but the time it takes to produce this issue is variable: few die sooner than the third day, and very few survive longer than the seventh. The average number die on the fourth and fifth days. In other rabid quadrupeds the existence is protracted to a similar period *.

The morbid Anatomy of the rabid Dog forms a most important feature in a portrait of the malady, but one, that, till of late, has been most unaccountably neglected †. It by no means unfrequently happens, that it is not until after a dog is dead that he is suspected of having been rabid, although he may have bitten one or more persons. Under such circumstances, it is evident that it is of the utmost importance to be able to decide, from an inspection of the dead body alone, whether the disease did or did not exist. Fortunately to those conversant with the morbid appearances peculiar to these cases, this is not difficult. From the great number of

and fear. I am by no means disposed to throw any one off his guard, or to encourage an unwarrantable security, with regard to the peaceableness of the temper in rabies. I would, on the contrary, strongly impress on the minds of my readers, that there is a constant necessity for caution in these cases, from the irritability present, and likewise from a peculiar treacherous disposition which very often exists, and cannot be too much guarded against. These cautions I would as strongly inculcate for the security of the public, as I have already endeavoured to combat the prejudices relative to the existence of a wild ferocious manner, so strongly characterised by the name of *madness*; to which both the irritability and treachery are unlike in by far the majority of instances. The treachery and irritability displayed, from whence alone arise what danger exists, it is my particular wish to prove, are not dependent on perfect alienation of mind, but are the effects of either a momentary impulse of anger, or of the instinctive wish to propagate the disease.

* Mr. MEYNELL gives ten days as the frequent duration of rabies; but for one dog which lives ten days, one hundred do not reach the eighth.

† In a celebrated French work, apparently written for the express purpose of collating all that was known in France on the rabid disease, so late as 1822, no description whatever is attempted of the morbid anatomy, and it is even mentioned as a somewhat extraordinary effort of observation that M. PORTAL had opened a rabid dog.—TROLLIET, p. 108.

cases which I have examined, the distinctive marks of the existence of the disease are become so familiar, that I would seldom seek or wish any other aids to guide my decision *.

On a careful examination of the head, the brain and its membranes will be found to have suffered more or less from the attack. Sometimes its vascularity is only slightly increased, but, at others, the vessels will be found distended with blood, particularly those of the pia mater. I have never observed the membranes thickened, as in idiopathic phrenitis. Inflammatory appearances within the cerebral cavity are usually less considerable in those cases called dumb madness †. Throughout the cavity of the mouth, much of the tumefaction which existed during life disappears after death, except the base of the tongue, which often remains greatly enlarged. Inflammatory marks from altered colour are, however, always present: sometimes this inflammatory hue pervades the whole. It is, however, more usual to find distinct inflammatory blotches throughout the pharynx, and often extend-

* Had Dr. PARRY made himself acquainted with the morbid anatomy of the rabid dog, even his pertinacity, in endeavouring to support a strict analogy between the human and canine rabies, must have yielded to the evidences before him. In the human subject, very few morbid appearances present themselves, sometimes none at all, but always trifling. In the dog, on the contrary, and his congeners, the most striking ravages present themselves, enveloping in one specific inflammation, parts that under no other disease are affected together. Dr. PARRY expressly says, "There cannot be a greater mistake than to suppose either that the fever of hydrophobia is of an inflammatory kind, "or that its peculiar symptom arises from local inflammation of the "fauces, cardia, &c. &c."—*Treat. on Hydroph.*, p. 89. Now, if it is not clear, from the morbid anatomy, that the rabies of dogs is altogether an inflammatory affection (but a specific one), all our pathognomonicks of inflammation hitherto received and admitted are totally false. Neither is it less clear, that all the rabid symptoms in dogs are immediately referrible to the state of the inflamed organs.

† In the pig, the sheep, and the horse, I have also found evident marks of visceral inflammation, and of considerable congestion within the head; but the cavities within the mouth and throat were not affected in any of those subjects which fell under my observation.

ing to the tonsils, fauces, and glottis; but a distinct inflammatory patch about the angle of the larynx, at the back of the rima glottis, is so invariably present, as to deserve the character of one of the distinguishing criteria of the disease. The epiglottis and rima glottis are commonly enveloped with an inflammatory tinge, which, now and then, extends a little way within the trachea, but less frequently is the œsophagus affected with it. Proceeding onwards, we invariably meet with an extension of the morbid inflammation to the thoracic and abdominal viscera; but by no means are these cavities always affected in an equal degree; on the contrary, in those instances where there has been a greater tendency to the raging variety, the thoracic viscera are usually more inflamed than the bowels or stomach. Not only are the lungs themselves, in these cases, found highly inflamed, and often gangrenous, but the costal pleura and diaphragm are affected also. Sometimes one thoracic cavity is found more highly inflamed than the other, and, now and then, the mediastinum pericardium, and even the heart itself, in cases of great rabid intensity, are found inflamed *.

When the abdominal viscera are examined, they almost invariably present marks of a full share of the morbid affection. If the dog has been destroyed early in the disease, these may not be very considerable, and an occasional case may occur where the appearances are not very strong, even when the animal is suffered to remain until the complaint kills him, but such instances are extremely rare. The degree of inflammation in the stomach and bowels, particularly of the latter, will

* It is, however, proper to remark, that the degree of inflammatory appearances in either the pharynx, the lungs, stomach, or bowels, is not always in exact proportion to the intensity of affection exhibited in the symptoms during life. It is also equally necessary to notice, that the same variety in the morbid appearances occurs as in the symptoms. Nothing can be asserted as invariable and certain. It must also be evident, that, when a dog is destroyed early in the complaint, the morbid appearances will not be the same as when he is suffered to die by the force of the disease.

usually be found in proportion as the character of dumb madness was more or less well defined, but some considerable degree of morbid alteration in the stomach is common to every variety of the disease, and is almost invariably present.

When our attention is directed to the stomach, we are first struck with its appearance of distention, and on opening into it, the cause is seen to arise from an accumulation of a considerable, oftentimes of an immense, mass of indigestible substances, as hay, straw, wood, coals, cinders, matting, or, in fact, any surrounding substance which proved small enough for deglutition. This disposition to take in unusual ingesta exists in every variety of the complaint; and as sickness and vomiting, though common in its early stages, are but seldom present during the latter periods of it, so the substances taken in, being of an indigestible nature, necessarily remain within the stomach until death. There is little reason to doubt that a morbid sympathy in this organ is the occasion of this peculiarity, and that the presence of these hard bodies gives some relief probably by the distention they occasion. Certain it is, that the appearance of this indigestible and incongruous matter within the stomach is so common, that it becomes a pathognomonick sign of the utmost importance, and it should be searched for in every case where doubt exists*.

* In describing the criteria of the disease, I have purposely omitted before enlarging on this particular, that I might here do it more fully, and that I might at once describe both the cause and effect: I must now therefore remark, that, of all the characteristic marks of the complaint, I consider this as the most genuine, and as the one liable to the least variation. I will not say that I never saw a rabid stomach, after death, without this *crude indigestible mass*; but, during the examination of more than two hundred cases, I do not recollect to have met with more than two or three without it; and in those, the non-appearance was, perhaps, to be attributed to an accidental fit of nausea. This genuine characteristic cannot, therefore, be too strongly kept in mind, because it is one that may be sought for by one person as well as another; by the most uninformed; and by the amateur as well as the professional man. It is

When the stomach is emptied, it usually presents marks of very intense inflammation. If the dog has been destroyed very early in the complaint, the inflammatory appearances may not be very considerable, but, in every such instance even, which has fallen under my notice, in some degree or other, they have still been present; while, in those cases where the animals had been suffered to die of the disease, I never remember one instance in which the morbid appearances were not considerable. The inner surface or rugous coat of the stomach is often livid, and not unfrequently sprinkled over with pustular prominences: it is not unusual, likewise, for it to present sphacelated ulcerous patches. I have even seen an opening through its coats into the cavity of the abdomen by the mortification present. The outer surface is seldom free from inflammation either, and which is usually particularly evident along the great curvature. The venal vessels are commonly turgid with dark blood, which is, sometimes, by the intensity of the inflammatory action, extravasated between the membranous and muscular coats. There are seldom many fluid contents present,—the mass of ingesta usually absorbs what may be there; but when this is not the case, and fluid contents are found, they invariably consist of a dark coloured liquor not unlike coffee grounds.

The intestinal tube is usually found with marks of disease

also more important, because it may be found long after death, when the other marks have become blended in the universal decomposition and decay of the body. I cannot exemplify this better, than by relating a circumstance of my being sent for, to a considerable distance in the country, to examine a suspected dog, who had been already buried three weeks, but was now dug up for my inspection. All other marks to be gained from the morbid anatomy had, of course, disappeared; and I must have been left in doubt (for the dog had come some distance, had bitten a child who was caressing him, and had been in consequence killed on the spot; nothing, therefore, of his history was known), had it not been for this unfailing criterion, which I found to exist, in this instance, in its full force, and from which I was led, without fear of error, to decide that the dog had been rabid.

very similar to those of the stomach. The inflammation is, in general, diffused and extensive, seldom however continuous, but rather in contiguous patches, principally affecting sometimes one and sometimes another of the intestines. The villous surface is frequently gangrenous, and the outer or peritoneal portion, from the coagulable lymph thrown out, is often found adhering to other portions. Sometimes intussusception exists, but constrictions and twistings are still more frequently present. Occasionally, the tube is altogether empty, but it is more frequently found partially distended with hardened faeces. The degree of inflammation between the stomach and intestines is not always correspondent; on the contrary, when the one has been very highly inflamed, it has not been unusual to find the other less so, but the variations in the appearance of the stomach are less frequent than those in the bowels. I have always found, that when the intensity of morbid inflammation has been present in the bowels particularly, that such cases, during life, had exhibited torpor, distress of countenance, affection of the parts of deglutition, great scratching of straw to the belly, paralysis, and all those characteristics more immediately appertaining to what is called, by sportsmen, dumb madness. On the contrary, when the intestines have been but little inflamed, and the stomach likewise not intensely affected neither, but the lungs extremely so; such cases, during life, have been characterised by great irritability, a desire to rove, and those appearances common to raging madness*.

The remaining abdominal viscera often participate in the affection. The mesentery is sometimes found clotted with grumous spots, and adhesions are formed between the parts from the coagulable lymph thrown out. The liver, pancreas, spleen, and omentum, but particularly the former, are often

* The thoracic viscera of the horse, cow, pig, and sheep, as far as my experience goes, appear more highly inflamed, under rabies, than either the stomach or intestines.

inflamed. The kidneys usually escape, neither is the bladder in general attacked, but the urine contained is often deeply tinged with bile from the hepatic affection.

The bodies of those dogs, who die of this disease, soon become putrid; but there is no peculiarity of smell attending them: neither are they so offensive as I have often witnessed them in other cases of inflamed bowels, particularly of that kind produced by mineral poisons. I have frequently offered to a healthy dog various parts of the body of rabid dogs, but I could never distinguish any marks of dread or disgust. I am, therefore, convinced that, living or dead, there is nothing in the smell that characterises rabies from one to the other, as has been so often alledged, among the other vulgar errors held forth.

Having thus described the symptoms and morbid anatomy of rabies, it may be worth inquiring whether any other diseases present appearances at all similar to these? What such diseases are, and how we can best distinguish between them? It is certainly possible, that those not at all acquainted with canine pathology, might mistake the distemper, tetanus, or even the lead colic, for rabies: but under any other circumstances it is not probable that such mistakes could arise. In some cases of distemper, the epileptic attack will remain for a long time, during which the delirium and wildness occasioned thereby may be mistaken for madness*. But, even in these cases, the duration of the fit is still determinate, and the dog returns as soon as it is over to his former peaceable habit, unless, indeed, he should be destroyed at once by its violence, in which case even no difficulty can arise but what may be

* If the distemper is ever mistaken for rabies, authors, by their confused and overcharged descriptions of it, have led to the error. Dr. JENNER's account of the disease, instead of deserving the praise his great name has drawn down on it, is entirely calculated to mislead; and it might be supposed, by his readers, that he was purposely describing rabies and not distemper.—See *Medico-Chirurg. Trans.* vol. i, p. 263. I could produce many similar instances in other authors.

readily overcome by an examination of the body, joined to other circumstances gathered relative to the disease. During all other periods of distemper, except this, no irritability, nor change of habit or manner, so common to rabies, is ever present. The spasmodic twitchings, and the discharge from the eyes, in rabies, can hardly ever, it is supposed, be confounded with distemper, even by the most unobservant, because, as this latter disease is an attendant on young dogs, so, in them, rabies is always characterised by extreme quickness of manner, *constant* irritability, and a restless, unceasing disposition to escape, which appearances are none of them usually present in distemper. The slow attack, the previous emaciation, and the constant hard dry cough, will also serve to distinguish distemper from rabies. The extreme rarity of tetanus in dogs, renders it not very likely to be confounded with madness ; and when it does attack, no mental irritability is present, neither is there any tumefaction of throat, or paralysis of the jaw : the tetanic spasm returns also at uncertain intervals. Tetanus, when it does occur, can commonly be traced to some local injury received ; and when it cannot, as soon as death relieves the sufferer, an inspection of the body at once discovers the difference. Colic, from the action of lead, produces excruciating pain, unknown to rabies ; the pain returns also at uncertain intervals, and, although plaintive moans are often heard, barking or howling is always absent ; the temper is never affected, but the animal is more than usually passive, neither are the jaws paralysed. Active purging also relieves this, but is totally inert in the other.

Having already endeavoured to shew that the rabid poison is only received into the system by the actual insertion of it by means of an abraded surface, it will now be our endeavour to inquire its *modus operandi* when received there. This subject has occasioned a diversity of opinions, but the most popular view of it is, that the rabid virus is at once mixed with the blood by the absorption of the lymphatic vessels, and that it afterwards exerts its morbid agency principally on

the nervous system and on other parts sympathetically. A less popular opinion, but one which is gaining ground every day, is that which considers the infection as remaining stationary within the wounded part until it is excited into action by some irritation in such part, from whence it is carried along the sensible and irritable fibre to exert a particular morbid action on certain organs.

The opinion which I have long entertained on this subject in some respects differs from both these, but is much more consonant with the latter. The rabid poison, I conceive, enters the circulation very soon, probably immediately, as it is received, exactly in the same manner with the poisons of venomous reptiles and other morbillæ. Some sympathy, however, seems to be kept up with the bitten part, without the agency of which the virus can never germinate into fatal action. The wound, therefore, when first received, not being under the *immediate* action of the morbid matter, heals as other common wounds, but, after an uncertain period, a *secondary* and lymphatic inflammation arises within the part, a new morbid compound is formed, and all the symptomatic appearances which follow are derived from the absorption of this newly generated poison.

This opinion appears to be borne out as well by analogy as fact. The action of this virus exactly coincides with the action of some other animal poisons *; and the circumstance now incontrovertibly established, that the excision of the bitten part, long after the wound has healed, indeed at any time previous to this secondary inflammation taking place, is a certain preventive to the consequences, greatly strengthens the opinion †.

* FONTANA's experiments on the poison of the viper go to prove, that the excision of the wounded part weakens, or wholly prevents, the future ill effects.

† I am fully aware, that this theory must principally rest on the certainty that a secondary inflammation, or, at least, a morbid alteration, does, in every instance, take place in the bitten part, and that be-

The *medical treatment* of brute rabies has hitherto, in every instance, proved unavailing, nor has that of the human hydrophobia been more successful. The few cases of fortu-

fore other symptoms have made their appearance. I am also aware, that this is confidently denied by authorities of great weight. Yet it is remarkable, that in nine out of every ten well recorded cases of hydrophobia in the human subject, this circumstance has been distinctly noticed: and I think we are by analogy led to conclude, that it was present in the tenth also, but that accidental circumstances prevented its being attended to. It is not necessary that an inflammation, to be active, should be very painful. An erysipelatous inflammation of extreme violence will come on during sleep, and remain for hours without notice. The tumefaction of the face, after the tooth-ahe, instead of being painful, is the signal for ease. I have also seen human anthrax proceed almost to gangrene before it has been much attended to. Have we not innumerable proofs that, although the external surface of a deep wound may remain nearly unaltered, much mischief may be going on within? Dr. PARRY, who proved one of the strongest opponents of this secondary inflammation, says, and that immediately after having denied its existence—"It is however certain, that some pain, if not in the part itself, at least in the course of the nerves supplying it, has usually attended the commencement, and a considerable part of the course of the constitutional malady." It is further remarkable, that this morbid affection of the bitten part was present in two out of the three cases whereon Dr. P. grounds his theory, and that the third case was altogether involved in obscurity, it not being known whether the sufferer was ever bitten, or how he became affected. It is true, that, in many of the rabid dogs I have met with, no clear marks of this secondary inflammation have appeared; but the incapability of the animal to tell all his feelings, the smallness of the puncture from a solitary tooth, and the consequent difficulty of finding it, readily account for the absence of the distinctive character in these instances. In many others, it has been most clear and well marked; indeed, in some, the morbid sympathy in the bitten part has been by far the most painful symptom, which shows that there are degrees in the intensity of this sympathy with the wound, and, if so, it is no less existent because, in some instances, its outward activity is not so observable. This secondary inflammation is still more strikingly apparent in horses, cows, sheep, and pigs, who are almost invariably observed to rub and tear their bitten parts with great violence from the commencement of the complaint. If,

nate issue on record have a veil of obscurity thrown over them that damps our confidence, and we have only hope remaining that time may yet afford us a remedy* for this dreadful scourge. The extent to which this inquiry has already been carried, will prevent a circumstantial detail of the various medicinal agents which have been used in rabies. I shall only cursorily notice them, and reserve myself for those that, fortunately for man and brute, are found efficacious as *preventives* against such attack.

The most antient remedy on record for the rabid malady, after it had actually appeared, was *cold bathing*, and which it was usual to apply to the extent of a temporary drowning; but, although it is handed down that it occasionally

therefore, a sympathy with the bitten part, or a secondary inflammation, is found so generally in the majority of human and brute rabid cases, are we not warranted, by analogy, in concluding it an inseparable pathognomonic symptom common to all? Likewise, from its usually preceding all other symptoms many hours, and even days, are we not warranted in considering the bitten part as the source from whence the future constitutional disease is derived?

“ *Homo optime sanus contagio hoc infectus post varium tempus incidunt*—*pit hoc ordine fere ægrotare: dolet locus, cui impressa contagii labes pri-*
“ *ma fecit.*”—*BOERHAAVE*, Aphorism 1138. *VAN SWIETEN*’s Commentary has, also, “ *Plurima observationes confirmant primum signum venani*—*“ actuosi redditu observari in ipse loco demorso, et præcipue in cicatrice*—*“ vulneris jam consolidati.*” In another part, *VAN SWIETEN* has also, “ *Omnia hæc observata docent aliquam mutationem in loco demorso*—*“ imprimis in cicatricibus vulneris præcedere solere illum statum, ubi*—*“ latius hactenus contagium incipit actuosum fieri. Unde videtur ad-*—*“ modum probabile illud venenum susceptum in loco demorso hæsisse*—*“ tamdiu.*”—*Comment.* tom. iii, p. 551. An observant author of repute says, “ *The bitten part, after some time, begins to be painful; the ci-*—*catrix becomes hard and elevated, a peculiar tingling sensation is felt*—*“ in the part, and pains begin to shoot from it towards the throat.*”—*THOMAS*, *Pract.* p. 358.

* “ *Nec desperandum tamen ob exempla jam in aliis venenis constantia, de inveniendo hujus singularis veneni antidoto singulari.*”—*BOERHAAVE*, Aphorism 1146.

proved successful, these accounts are not now relied on *. I tried it on two rabid dogs to the extinction of life almost, and it certainly suspended the progress of the complaint for some hours; which I attribute not to any specific virtue in the bathing itself, but to the violence done to the constitution: for it is remarkable, that any great violence offered, from accidental causes †, during the progress of the disease, particularly in its early stages, in every instance appears to beget a new action, which, for a time, arrests the progress of the rabid one, and suspends its more active symptoms for a longer or shorter period, usually in proportion to the violence done. The morbid poison, however, soon resumes its ascendancy, and the fatal issue is only protracted, but never removed.

Warm bathings have been also fully tried, both in antient and modern times, with no better success. Bleeding largely was an antient remedy, which has been revived by the moderns; and on the authority of some reputedly successful cases, but now discredited, I was induced to try it to its fullest extent (*ad deliquium*) on two or three rabid dogs. Mr. YOUATT has also, I believe, done the same ‡, but without permanent benefit; although in these instances, as in all others where much violence had been committed on the con-

* CELSUS recommends it, and gives instances of its successful application. EURIPIDES is one who was said to have been cured by it.

† During the *rovings* of a rabid dog it is to be expected that he will meet with severe beatings from other dogs, and, not unfrequently, he will be subject to violent attacks from human persons, from whom he may, however, eventually escape, although half killed. I have had many opportunities of observing dogs, after their return, which have been so treated, and I have invariably found that an absence of the more active appearances of disease have followed for two or three days, and that, in some cases, to such a degree as to deceive those around, and make them consider the recovery of the animal as certain, but gradually the complaint has returned with all its violence.

‡ M. GOSSIER, Professor of the Veterinary School of Lyons, also employed bleeding on three dogs to deliquium, without success.

stitution, the morbid action has been suspended. Of electricity and galvanism, as applied for the cure of rabies, I have no experience: it has been fully tried in the human subject without success. Vinegar, which, in Germany, was said to have arrested the human disease, has failed in dogs in every instance in which it has been made use of. Mercury I have also tried to its fullest extent, and in most of its popular forms, without benefit. Camphor and opium, both by the mouth and per ano, have proved equally inert in these cases *. With the belladonna I succeeded no better; and the alisma plantago, or water plantain, has proved equally unsuccessful with Mr. YOUATT. The internal and external exhibition of the volatile alkali has not been more fortunate, although the analogy of its beneficial effects, in cases of poisoning by the bite of the cobra de capello, had raised hopes of its proving useful here also†. Cauterizings, scarifyings, blisterings, &c., have been applied to the bitten part in the human subject after the attack, but without avail. From the known property of arsenic in lessening the spasm of epilepsy, something was hoped from it in the hydrophobic spasm of the human, but it has not answered the expectations formed. On rabid dogs I have frequently tried it, and, from its decided capability, evinced on each trial, of suspending the complaint, I was once also led to hope much from it, but repeated experience has proved that its benefits are not permanent‡, but act only like other violent means. Chlorine has been

* Professor DUPUYTREN injected opium in solution into the veins of two rabid dogs, but without any alleviation of the symptoms.—*Dissert. de Ch. BUSNOUT, Paris, 1814.*

† TISSOT strongly recommends the Eau de Luce, and says, “ Il calme l’agitation, occasion un seur abondant et fit disparaître les symptômes.”—*Avis au Peuple, tom. i, p. 179, 8vo, Paris.*

‡ I have given it, in these cases, in very large doses, as five, six, and even a greater number of grains, and have been surprised how little effect it appeared to have, probably from the stomach being already affected with a specific inflammation, by which it was rendered less likely to be acted upon by occasional causes.

said to remove the hydrophobic symptoms, but late trials have shewn the fallacy of the assertion. The same has happened to sulphuric acid, with which a Dr. SKUDERI pretends to have effected several cures of hydrophobia, by its internal and external administration. There is, therefore, reason to believe that we have no authenticated case of the rabid malady having yielded to any treatment, either in man or beast, after it had actually made its attack.

The preventive treatment.—Here, fortunately for mankind, we stand on vantage ground, as we can, in almost every instance, insure the *prevention* of any hurtful consequences from the rabid bite. The prophylacticks that both interest and ignorance have extolled and brought into use, are innumerable. Very few of them, however, have deserved the smallest confidence; on the contrary, they have lulled into a fatal security those who have relied on them *.

The oldest prophylactick with which we are acquainted, is *suction*. We have very ancient records of its employment, and, if we can believe these legends, a particular family enjoyed the privilege, or devoted themselves to this process of drawing, by the application of the mouth to the wound, poisons inserted by venomous animals †.

* BOERHAAVE complains of these impositions. “Nec Æschrionis apud “Galenum et Oribasium arcano de canceris combustis; nec Scribonii “Largi famigerata opiate ad rabiem Siculorum; nec Peregrini consilio “de pelle hyænæ; nec Ætii, Rufi, Possidonii, cinere cancerorum cum “theriaca; nec jactata Palmario medela; vel nimis laudato Mayerno, “Grew, et venatoribus stanno cum Mithridatio; nec in somniis sacris “revelata radice cynorrhodonis; aliisve in cœlum elato cichone cinereo “terrestri pimpinella, jecore rabiosi canes exusto, et similibus exceptis.”

† CELSUS strongly recommends this practice, and brings forward the family of PSYELLES to prove how free it is from danger: “Non gustu, “sed vulnere nocent.”—“Ergo quisquis exemplum PSYLLI secutus, id “vulnus exsuxerit, et ipse tutus erit, et tutum hominem præstabit.”—*De Medicin.* lib. v, chap. ii, sect. 12.—FOTHERGILL, HEISTER, and VAUGHAN have spoken favourably of suction as a preventive, and there is reason to suppose that it might be employed in some cases with probability of a successful issue: should danger be apprehended from the epithelium

Cold-bathing, but particularly *sea-bathing*, as a preventive, is a practice also of great antiquity, and, even yet, the uninformed classes place implicit reliance on it. Its incapability of insuring safety was, however, early noted, and **PALMERIUS**, **AMBROSE PAREY**, **DESAULT**, and others, were at much pains to discredit the practice. Both hot and cold bathing, however, long retained some powerful advocates. **CELSUS** informs us, that it was the practice of his day to immerse those who had been wounded by a rabid animal in a hot bath *, to promote perspiration, and, on their leaving it, to give them large quantities of wine to drink. **HOFFMAN** preferred tepid to hot bathing, and **BOERHAAVE** and **MEAD** appear to have done the same; but it seemed indifferent, in **BOERHAAVE**'s opinion, whether the water was fresh or salt. However respectable the authorities in its favour, the lamentable experience of many who have trusted to its efficacy, even when performed, as **VAN SWIETEN** has it, *ad sufficationem usque*, but too well proves. Among the well-informed, therefore, no reliance is now placed on it.

Mercury has, for a very long period, been employed as a prophylactick. In 1732, we find **DESSAULT** urging the use of mercurial frictions †. **SAUVAGES** was very favourable to

of the lips not offering a sufficient resistance to the person, or what may be really necessary to guard against any small vessels being ruptured in the act of sucking, a piece of thin bladder might be interposed, or the suction might be still more safely made with the bowl of a tobacco pipe. When it can be procured, a cupping glass can be substituted for the mouth with the utmost propriety.

* "Protinus in balneum amittunt, cumque ibi desudare, dum vires corporis sinant, vulnere aperto quo magis ex es quoque virus distillet."—*De Medicina*, lib. v, c. 47.

TULPIUS is also no less warm in his commendation of sea bathing: "Neque vidi hactenus quemquam (licet viderim plurimos) cui tempestivè in mare projecto quidquam sinistre postmodum evenerit, sed salutari "hoc remedio vel flocci facto, vel tardè ac timidè adhibito, dedere multi "irreparabiles supinæ suæ incuriaæ pœnas."—*Obs. Med.* lib. vii, c. 20.

† "Tous ceux en qui je l'ai employé, dit cet auteur, ont été préservés "de la rage."—(*Journal de Med.*)

them *. DARLUC, BAUDOT, and TISSOT, are equally warm in their commendations of this method of treatment. The internal use of mercury as a preventive has had even a greater number of partisans. Sir G. COBB's famous Tonquin remedy, so highly extolled by CLAUDE DUCHOISEE, in India†, was prepared from the native and factitious cinnabars, with musk. Turbith mineral, which is a sub-sulphate of this metal, was highly extolled by TISSOT ‡, and has been very generally used among the dogs of this country. Many other authorities of note, as Dr. THOMAS REID, DR. JAMES, &c. &c., might be quoted, who have extolled the preventive efficacy of mercury; some preferring one preparation and some another: but all have used them to a state bordering on salivation, reasoning on the analogy of its preventive and curative efficacy in syphilis. The long continued use of it, and the weight of the authorities that have been favourable to its use, would lead us to suppose that it certainly has some preventive efficacy §; but as instances are not wanting of its entire failure in man and beast, under every advantage of administration, so it has ceased to be relied on as solely sufficient to guard the constitution ||.

Arsenic.—This powerful mineral possesses many medicinal

* “ J'ignore que ce remède ait encore manqué.”—*Ch. d'Œuv.* p. 148. *Nosologia*, tom. ii.

† “ Hommes, femmes, enfans, Indiens, Portugais, Francois, &c. &c. “ plus de trois cents personnes, sans qu'un seul, a été affligé du plus “ petit symptoïn de rage.—*Nouv. Meth. pour le Trait. de Rage*, 21.

‡ *Aris au Peuple*, tom. i, p. 156. A celebrated sportsman says, “ During twenty-one years that I kept hounds, I never knew it fail.”—*Treatise on Greyhounds*, 2d edit. p. 88.—It was also Mr. BECKFORD's favourite remedy. So many instances of its failure have, however, since occurred, that it has fallen into disrepute.

§ Dr. MOSELEY appears to be one of the last advocates for the use of mercury extended to a slight salivation: but even he recommends the use of caustic to the wounded part in conjunction with it.

|| LEROUX, OUDOT, RAYMOND, LAFOND, MAJAUT, ENAUX, CHAUSSIER, and MORVEAU, are neighbouring authors who have denied the efficacy of mercury in this case; and, among ourselves, Drs. FOTHERGILL and VAUGHAN have followed the same course.

virtues, and its known tendency to check the spasmodyc contraction of epilepsy raised hopes that it might act favourably in the violent contractions of rabies ; but, although it has not hitherto stemmed the fatal torrent, yet, from its obvious action on the disease, and from its alledged properties of counteracting the bites of other venomous animals, the propriety of a full trial of it, as a prophylactick, appears evident. A favourable account of its virtues, when internally administered, may be gained from Mr. IRELAND's Memoir, *Med. Chirurg. Trans.*, p. 393, and likewise from a quotation given in the *Lond. Med. Rev.*, March and April 1793. Of its external employment I shall have occasion to speak hereafter.

Dr. MEAD's *pulvis antilyssus* has wholly lost its reputation, although, during his practice, he expressed a wish that he knew, as certain, a remedy for any other disease *.

The *Ormskirk Remedy* is a striking proof how easily a reputation may be gained, and how undeservedly. Palpable instances of its failure are multiplied upon us, and yet, until of late, it enjoyed a very general share of confidence ; and even yet, in the vicinity of its preparation, it is occasionally trusted to †.

Dr. PREVITALI, in the *Giornale des Fisica*, has published an extended account of the virtues of chlorine, not only as a direct cure for the actual hydrophobia, but as a preventive also. It is not, however, supposed that these accounts are to be depended on.

* This powder was composed of the ash-coloured liverwort (*lichen cinereus*) and black pepper.

† There is every reason to believe, that Mr. HILL's Ormskirk Medicine is nothing more than powdered chalk. Neither need we wonder that articles so inert should gain celebrity, when we consider that not more than one in twenty human persons, who are bitten, become affected ; and that, perhaps, many of those who take this or other popular remedies have never been bitten at all. When these are added to others, who, having been bitten by a dog who was only mad in the fears of those around him, it lessens the number of those really inoculated down to a very few, and these few, it is unfortunately too well known, fall a sacrifice to this ill-placed confidence.

The *water plantain* (*alisma plantago*) has also proved one of those unfortunate articles offered to notice, which only served to raise hopes it was doomed never to realise. As it came recommended by a Russian counsellor of state, M. JALOWSKY, at the express direction of his government, it met with a cordial reception, and a full trial in England and elsewhere, but, I believe, every where it proved fallacious. It should, however, be stated, that, in the trials of it made by Mr. YOUATT on rabid dogs, it certainly appeared to arrest the progress of the disease for a time, in the same manner with some other plans of treatment, but, as under those, so, under the use of the plantain, the fatal termination was the same.

To enumerate all the other articles, particularly of the vegetable world, that at some period or other have been deemed prophylacticks, would be endless. Among the most popular we may mention the *eglantine*, or *wild rose* (*rosa sylvestris*, LINN.)*, *pimpernel* (*anagallis*) †, *deadly nightshade* (*atropa belladonna*) ‡, *rue* (*ruta*) §, *garlic* (*allium sativum*), *sage* (*salvia*), *daisy* (*bellis*), *vervain* (*subena*),

* The *wild rose* seems to have been a remedy of much repute in its day (BAUDOT, *Mem. de la Soc. Roy.* 1783). In a communication to the Royal Society of Medicine of Paris, M. PROVOST details the virtues of its inner bark. And, among the Sicilians, its spongy excrescences (*bedeguar*) are considered a powerful antidote to the rabid poison (*Museo di piante rare du P. Boconi*). According to PLINY, its virtues were revealed by an oracle; from whence we may learn, that a preventive efficacy was long ago attributed to it.

† An account of its supposed anti-rabid virtues may be seen by consulting *Hist. de la Med.*, SPRENGEL, tom. ii, p. 48; *Œuv. de BOURGELAT, Reflex. sur la Rage Voy. Journ. d'Aricult.* p. 109.

‡ As long as the time of PLINY, the *belladonna* has been used as a remedy against rabies. APULEI also notices it; and, in later times, MUNCH also, *Hist de la Soc. Roy. de Med.*, 1783, 2d part. At the present, no dependance is placed on it.

§ Rue was a very antient favourite prophylactick, and it still enters into many of the country nostrums and drinks against madness. It formed also an ingredient in the celebrated powder of PALMERIUS.—See ANDRY's account of celebrated remedies.

fern (*polypodium*), wormwood (*artemisia arborescens*), mugwort (*artemisia vulgaris*), betony (*betonica*), tree box (*buxus*)*. My opinions on the efficacy of this plant, as a

* The tree-box is one of the oldest internal preventives made use of. Mention appears to be made of it in the writings of HIPPOCRATES; GALEN and CELSUS likewise speak of it. It has continued to be used from that time to the present, and it forms the active principle in the celebrated *Hertfordshire*, or WEBB's drink. The rue which enters into it, in equal proportions, I have not the same dependance on. The *buxus*, or box, has long been known in India, and used as a preventive of rabies; but it is the dwarf box that is there used, and it is usually mixed with a decoction of the horns of the rhinoceros.

For some years I had been informed that there lived, near *Watford*, a cottager of the name of WEBB, who dispensed what is commonly called a *drink*, as a remedy against rabies generally. The many testimonies I had received from gentlemen, relative to its efficacy, supported by facts apparently authentic and conclusive, gave me reason to suppose that it really possessed some preventive properties: but, till the year 1807, I had not embraced any opportunity of putting its qualities to the test of experiment. About that time madness proving very prevalent, and the public curiosity becoming very much excited on the subject, my attention was awakened to the advantage of such a preventive.

To endeavour, therefore, to ascertain the grounds on which the reputation of this remedy stood, I went to *Watford*, and prosecuted my inquiries with such success, that, from one of the two brothers who had dispensed it, I gained the original recipe, which had been before verified on oath before a magistrate. I immediately presented the public with the composition, with all I had learned relative to it, through the medium of the *Medical Review* for December 1807, where the original recipe, and mode of preparation, may be seen at length. The following method of preparing it is an improvement on the original formula:—

Take of the fresh leaves of the tree box.....	2 ounces
Of the fresh leaves of rue.....	2 ounces
Of sage.....	half an ounce.

Chop these finely, and, after boiling them in a pint of water to half a pint, strain and press out the liquor. Beat them in a mortar, or otherwise bruise them thoroughly, and boil them again, in a pint of new milk, to half a pint, which press out as before. After this, mix both the boiled liquors, which will make *three doses* for a human subject. Double this quantity will form *three doses* for a horse or cow; *two-thirds* of it is sufficient for a large dog, calf, sheep, or hog; *half of the quantity* is re-

preventive, are already before the public; and, although I would on no account recommend its being trusted to when other means, as the destruction of the bitten part, can

quired for a middling sized dog; and *one-third* for a small one. These three doses are said to be sufficient, and one of them is directed to be given every morning fasting. Both human and brute subjects are treated in the same manner, according to the proportions specified.

In the human subject I have never found this remedy produce any effects whatever, except a momentary nausea from disgust. To prevent this disgust operating disadvantageously, the old recipe directs it to be taken by any human person two or three hours before rising, by which method it will be less likely to be brought up again, as otherwise so large and unpleasant a dose might be**. Neither in any animal, except the dog, have I ever witnessed any violent effects from the exhibition of this remedy. In dogs, however, I have frequently seen it produce extreme nausea, panting, and distress; in two or three instances it has even proved fatal: but, as it is probable that it is more likely to be efficacious when its effects on the constitution are evident, and as, at the same time, it is proper to guard against these effects becoming too violent; so it is prudent always to begin with a smaller dose than the one prescribed, and to increase each succeeding dose till it shows its activity, by sickness of the stomach, panting, and evident uneasiness. Under such a plan, perhaps, five doses are not too much.

Between the years 1807 and 1817, this preparation of box and rue was administered, under my direction, to nearly three hundred animals of different kinds, as horses, cows, sheep, hogs, and dogs††;

** It is unfortunate that this remedy should be so bulky, and so nauseous. Its bulk often renders it difficult to give to a dog, particularly without waste; its nauseous taste also makes it very liable to be brought up again: either of which circumstances must, of course, render its efficacy doubtful. To obviate these inconveniences, I have endeavoured to condense the dose, by making an *extract* of the box, in which plant I believe the efficacy principally, if not wholly, exists. But I have every reason to believe, that its preventive quality is lessened, if not altogether destroyed, by these means. Nor have I succeeded in any other attempts at lessening the dose. These inconveniences must, therefore, be put up with, and the animal must be made to swallow the whole, after which he should be attentively watched to observe whether it is retained on the stomach. If such should not be the case, the dose must be repeated until it remains.

†† I have administered, in the course of my practice, this remedy to nearly fifty human persons also; but as most of those joined with this treatment the *ex*-cision or cauterization of the wounded part, and as, in others, the rabid virus would not probably have taken effect, so I lay little stress on these proofs of its

be effected, yet if, as I believe, it will be found that it possesses some considerable preventive virtues, its importance will be evident; for circumstances often arise which render the resorting to the external means of excision or cauterization impracticable, from the difficulty of detecting the wounded part in animals covered with hair. I have searched a dog over most carefully for an hour without discovering any wound, but which dog has afterwards become rabid; and when one or two bites are detected, others may remain. I have found this happen so frequently, that a preventive remedy, with only a moderate degree of efficacy, is of the utmost importance to the welfare of the brute creation. Neither would the benefits of such a prophylactick remedy be lost on the human subject, where, from extensive laceration, the complete extirpation of the bitten part is rendered doubtful, or where the dread of the operation, or the peculiar situation of the patient, or of the wounded part itself, renders the ex-

the latter in by far the greater proportion. It may naturally be presumed, that ungrounded fear operated in some instances, and that it was given to animals who were suspected only to have been in danger. Some of the remainder, it may also be supposed, would have remained safe, had nothing been done for them. In others, washings, cauterizations, &c., had been added to the box remedy; yet, still a very considerable number, after all these admissions, must have remained exposed to the preventive power of this preparation alone, out of which number only nine or ten cases of its failure occurred. In a few of these it is reasonable to suppose that the medicine was not all got down, or otherwise was returned; but five or six of them were palpable and fair instances of failure, the medicine having been all given and retained. It is remarkable, that, of these palpable failures, the majority were wounded in the head—one of these was a horse, bitten in the lip; which further agrees with what I have already remarked, that the inoculation more certainly takes effect, and the disease makes its attack earlier, when received in the head than elsewhere.

efficacy, although three or four of these persons, at their own express desire, trusted solely to it. Its real efficacy appears unequivocally proved by the numerous instances of canine safety which followed from its use.

tirption unadvisable. Enough is stated below to render the matter worthy of further investigation. Fourteen or fifteen years' experience have only served to increase the conviction in my mind, that the qualities of the tree box, as a preventive of rabies, merit great public attention.

Not only the mineral and vegetable world have yielded prophylacticks of ephemeral popularity, the animal kingdom also has been ransacked by interest, ignorance, or credulity. The scarabei, or beetle tribe, particularly the cockchaffer, or may-bug (*scarabæus melolontha*, LINN.)*, the blister fly † (*meloe vesicatorius*), and various testacea ‡, are of this kind. The liver of the animal by which a person has been bitten is a remedy as old as the time of PLINY, who speaks himself of its efficacy. We have it also recorded, that PALMERIUS forced his patients, who had been bitten by a rabid wolf, to take the dried blood of the animal.

But as the destruction of the bitten part, judiciously effected, has been found, in every instance, to prevent the further developement of the disease, so this practice has nearly superseded all other preventives: but by what immediate process the wounded surfaces are to be removed, has occasioned much difference of opinion. That which has been generally practised, is either the actual cautery or burning, the potential cautery by escharotics or caustics, or the excision of the part by the knife.

The *actual cautery* was employed by the antients, who

* WEIKARD, *Thesaurus Pharmaceuticus Galeno-chemicus*, 1626. If we credit other accounts handed to us, these insects were no less famous in Spain, Germany, and Prussia, than in France.—(ANDRY, p. 271.)

† AVICENNA and MATTHIOLUS wrote expressly on the virtues of this meloe, as an infallible remedy for the rabid malady. WERTHOF and ANDRY also notice it.

‡ As the testacea, particularly calcined crabs, were used so long ago as the time of GALEN, and were recommended by SENNERT, it would seem that an early confidence was placed in absorbents. It was this confidence, probably, that begot the Ormskirk medicine, which appears to be only the earthy absorbents coloured.

burned the parts with heated iron, sometimes with brass, silver, or gold *. Some of the moderns have also favoured its use; and as it is a remedy immediately at hand, it is not an ineligible one, particularly where the unnecessary dread of after consequences, from immediate absorption, is fixed in the mind, and also where other assistance is not at hand. When, likewise, the wound is of a determinate form, and superficial in extent, the actual cautery, or heated iron, is, from the quickness of the operation, a very convenient method, particularly with regard to horses, cows, and other large animals, who are not easily restrained. In such cases, a *budding iron*, so called among farriers, is a convenient instrument, or even a kitchen poker, or any other iron whose surface may be adapted to the form of the wound, when heated red hot, may be applied; observing due caution in the application, that the part is sufficiently burned without injuring the surrounding parts too deeply.

Caustics, or the *potential cautery*, may be applied under many forms. The *caustic potass*, or *potash*, formed into a solid body, and then called *lapis infernalis*, is a very powerful escharotic, and, when an extensive surface not in the neighbourhood of very important parts is to be destroyed, it is an excellent preparation; but it should be remembered, that it liquefies speedily, and, therefore, when great nicety is required, and a slow destruction is advisable, as about the head, or in the vicinity of important vessels and nerves, it is less eligible. The *nitrate of silver*, usually called *lunar caustic*, liquefies less speedily, and is equally powerful, provided a longer time is allowed for its operation. In some cases it is recommended to be powdered and sprinkled over

* PORTAL informs us, that GALEN, DIASCORIDES, CELSUS, ÆLIUS, RUFUS, and all the Greek physicians, considered the actual cautery to the bitten part as the most powerful means of prevention against the rabid malady. And, according to MATTHIOLUS, during his time, it was debated whether gold or silver would not form a better cautery than iron. In VAN HELMONT's time, brass was proposed.

a surface, or to be inserted within a deeper wound, mixed with an equal part of other matter to lessen its potency, and an adhesive plaster then applied over to confine its effects. This method, in animals, can only be advisable when a very extensive laceration with numerous jagged edges and sinuosities exists, particularly in the neighbourhood of such important parts that the knife cannot be wholly depended on: in all others, this plan would occasion so much pain and resistance on the part of the animal, as to defeat its intention, by being rubbed or torn off. I have, through a very long practice, adhered to the use of this form of caustic, as the most manageable and effective of all the escharotics. It may be cut or scraped to any shape, and long habit has enabled me to make the eschar thick or thin, deep or superficial, at pleasure. In a word, it is slow but certain. *Muriate of antimony*, called *butter of antimony*, is a very favourite escharotic application with some practitioners, particularly with the French *: it is applied by means of a piece of linen or lint fastened to a probe, skewer, or other matter of that form; the surface of the wound being then smeared over with it. As its action begins immediately, and, after a few minutes, is confined to the parts it is applied to only, so it is evident that it is a more eligible application for extensive lacerations, and wounds of uncertain depth and extent in animals, than the powdered nitrate of silver. Potass and lime are sometimes also used as escharotics. The mineral acids, likewise mercurial preparations, as the oxymuriate and red nitrate of quicksilver, are now and then also employed in this way.

The use of caustics has been objected to as not carrying the destruction of parts far enough, the formation of the eschar preventing the further progress of the caustic agent,

* “ *Le beurre d'antimoine* (hydrochlorate d'antimoine) est préféré à tous les caustiques que nous avons cités, par LEROUX, qui l'a proposé par SABATIER, par PORTAL, et par ENAUX et CHAUSSIER, parceque son action est prompt.”—TROLLIET, p. 341.

but this I am convinced is not a cogent objection. If the nitrate of silver is formed into a point, and a moderate friction is kept up by it over the eschar, the decomposed portions are removed by the rubbing, and the cauterization goes on to any depth or extent required. In penetrating wounds, made by the canine teeth, the probe having detected the course of the wound, the knife may be properly employed to dilate it, and render it accessible to the approach of the caustic; in which case equal certainty is gained by one as by the other, with less loss of substance. It has also been objected to caustics, that they may dilute the virus, and carry it farther within the wound; but, if previous friction and ablation of the wound take place, it may be supposed no virus will remain beyond what the absorbents have already taken up. It is likewise said, that they cannot be conveniently applied to the bottom of a deep wound, in which case the knife can be best employed in dissecting out the whole cavity, with all its surrounding parts. A still more imaginary objection has been urged to the use of caustics, particularly to those formed of the caustic alkalies, which is, that in their action they unite themselves with the morbid saliva, and with the decomposed animal matter, forming, together, a saponaceous mass or eschar, which may retain the virus, and keep it ready to be acted upon by a new absorption. That such a fear is entirely groundless, will appear, when it is considered that the agent employed, be it what it may, which is equal to the destruction of the animal solids, must also of necessity be more than sufficient to decompose the animal fluids also, and totally deprive them of any morbid activity; and this we find to be actually the case with rabid virus mixed with even diluted caustic matter, as has been exemplified in the experiments of HUZARD, Dr. ZINKE, and others, where such matter entirely failed to excite rabies.

Excision of the part, after the rabid bite, is practised by many of our most eminent surgeons of the present day, in preference to cauterization; but as each of these modes of operating contain some advantages over the other, so each

also owns some disadvantages. A skilful surgeon, therefore, will bind himself to neither, but will use the one or the other as occasion suits, or will often unite them in the same operation. The partizans for the use of the knife argue, that the operation of excision is quicker, and can be applied more extensively. It is certainly, where much is to be done, more quickly performed ; but when it is so done, unless perfect ablution has removed all surrounding virus, may not the very instrument which is to insure life be sowing the seeds of death, by making a fresh morbid inoculation at every section ? To prevent this, therefore, when excision is absolutely necessary, it is prudent, after every stroke of the knife, to wipe the blade carefully. Towards animals, particularly of the larger kinds, where despatch is requisite, and where deformity and a destruction of parts are not of so much consequence, excision may be considered preferable. In the neighbourhood of large blood-vessels, nerves, &c., it is evident that the knife must be used with extreme caution, whereas the caustic may be applied freely with much less fear, as the eschar which starts up protects the parts underneath, and enables them to reinstate themselves previously to sloughing, if they should be slightly injured.

The flow of blood, during excision, is very apt to obstruct a proper and clear view of the extent of the injury, and a consequence follows which I have frequently witnessed among surgeons in operations on the human subject *, which is the

* I cannot help thinking, that surgeons, from fear of the after consequences, perhaps to themselves, as well as their patients, commit an unnecessary waste of parts often. I have seen a bite of the end of the finger, and graze of the skin of the knuckle of the same finger, treated not only by an excision of the whole phalange, but also of the metacarpal bone it adhered to. I was present, also, when an eminent surgeon, for a moderate puncture of the lip from one tooth only, took out the whole surrounding portions completely through, as in the operation for hare lip. A similar deformity and stricture of lip was thereby occasioned through life. I have likewise had many other occasions to regret this over caution and free use of the knife.

removal of a much larger portion than is absolutely necessary. With the caustic nothing of this kind happens: proceeding deliberately, every portion of wounded surface is taken in succession, until the whole is passed over.

Process of Operation for the Rabid Bite.—When a dog, or any other animal, has been attacked by one that is rabid, it is evident that a difficulty presents itself which does not exist in the human subject under similar circumstances. The incapability of pointing out the wounds that may have been received, and which the hair may prevent from being observed, renders it necessary that a very minute examination of every part of the body should take place, by turning the whole hair deliberately back*; after which, to remove any rabid saliva that may adhere to the hair, the animal should be washed all over, first with simple warm water, and, next, with water in which a sufficient quantity of either potash or soda is dissolved, to render it a moderate ley, in doing which the eyes must be carefully guarded. During this latter washing, the wounds should be pressed to excite a fresh flow of blood. Having finished this operation, which will render the dog, or other animal, secure from accidental virus hanging about, it would increase the safety of the operation, if the wounds were to be bathed with an arsenical solution made by dissolving a dram of white arsenic in four ounces of water. In many instances, this ablution of the wounds with an arsenical solution of double or treble the strength here noted, is trusted to solely as a preventive; and apparently, from the experiments that have been made, it has been attended with uniform success. After these precautions have been attended to, proceed to the actual removal of the bitten part by either of the modes already described. I have before

* It is extremely difficult to detect all the minute bites dogs may meet with, which renders the washing them all over with some active wash indispensably necessary: perhaps the very best that could be used, would be an arsenical solution of moderate strength, as one dram of arsenic to a quart of water.

stated, that, in my own practice, I have principally made use of *caustic applications* for such removal, occasionally using the knife to enlarge an opening, to remove ragged edges, or entirely to excise protruded parts; but, under either process, particularly that of the caustic, when a lacerated wound has been made, or one of considerable depth, it is prudent, on the removal of the slough, again to touch the surfaces. The keeping a discharge from the sores, for some time, by means of stimulating applications, is, in the animal at least, unnecessary; neither does it appear at all to insure the success of the operation, when properly performed, in the human.

Although as regularly educated to the practice of *human medicine* as any of the eminent characters around me, yet it is probable I shall be considered as *travelling out of the record*, by introducing in this work any matter directly treating on that variety of the rabid disease which belongs immediately to mankind, characteristically called hydrophobia; and were I not impelled by strong motives, I would, for the sake of consistency, altogether avoid it; but the supposition that I may, by this irregularity, be enabled at all to lighten any of the terrors, real or imaginary, with which I know many persons suffer themselves to be overwhelmed, outweighs every other consideration. During the years of the extreme prevalence of the rabid malady, it is natural to suppose that some notoriety must have attached itself to the extent of my opportunities of observing it, and the known attention I had paid to it. The confidence begot by this, occasioned it frequently to happen, that, from being first consulted on the rabid dog, I was next consulted, also, on the person wounded by it, which connection of circumstances drew under my immediate observations a greater number of bitten persons than has fallen to the lot of almost any individual. It has so happened, that particular circumstances have occasioned a considerable number of the cases in the practice of other surgeons to be also submitted to my consideration. Of those persons who, at their own desire,

chose to trust themselves to my sole direction, I operated on upwards of fifty, every one of whom I have the satisfaction of knowing has remained unaffected. The benefit of this experience, added to a warm interest in, and close attention to, the subject, has enabled me to satisfy myself relative to some disputed points of immense moment to both the safety and the peace of mind of those who may be hereafter endangered.

It is very generally considered, that the destruction of the bitten part is the most certain preventive of hydrophobia; but it is little credited, that it is of no consequence that the excision, or the cauterization, of the wounded part should be *immediately* effected. Nevertheless, I firmly believe, and I am borne out by innumerable facts and well-directed experiments, that the operation may be performed, with equal certainty of success, at *any time* previous to the *secondary inflammation* of the part bitten, as though it had been done the first moment after the accident. However, as it is always uncertain at what time this secondary inflammation may take place, so it is prudent to perform the excision, or cauterization, as soon as is convenient: but it is frequently a matter of great importance to the peace of those, unfortunately wounded in this manner, to know that, when any accidental cause has delayed the operation, it may be as safely done at the end of one, two, or three weeks as at the first moment of its happening. I have frequently removed the bitten parts many days after the original wound has been perfectly healed up, and the operation has always proved completely successful. I ground this opinion on a full conviction that the *safety* of the operation does not consist in *preventing immediate absorption*; on the contrary, I am firmly persuaded that the *rabid poison* is absorbed directly, or very soon after, the wound is inflicted, and is immediately from thence carried forward into the circulation. I am, however, persuaded that, in this primary state of its circulation, the virus can never produce rabies in brutes, or hydrophobia in man. It is, on the contrary, absolutely necessary, before

it fully exerts its baneful influence, that it should undergo some further change. *It must return to the part it was originally received by, and it must there occasion a new and specific inflammation, the consequence of which is the production of some new morbid compound generated by this secondary inflammation; and it is the absorption of this compound that is alone capable of producing rabies or hydrophobia.* Consequently, when the part, that was originally bitten, has been removed, either by cauterization or excision, no secondary inflammation can take place. The first received virus remains inert, for it is incapable of acting on any other than the original wound.

This fact being fully established, will tend, I hope, to banish much misery and apprehension relative to any time which may intervene between the bite and the removal of the bitten part. It matters not, I again repeat, at what time this is effected, or how long soever it may be after the bite has been received, provided it be done before any secondary inflammation of the part or uneasy sensation is felt in it.

I cannot help manifesting an extreme anxiety to impress this important fact on the public mind, solely with a view to remove those false impressions which have embittered months and years of the existence of many valuable members of society. I have entered more into a general detail on this interesting subject of the rabid malady than on any other, from a conviction of its importance to the welfare of the brute race, and to both the welfare and peace of mankind in general. Not only are the lives of thousands of human persons rendered miserable by the false impressions entertained relative to it, but the whole race of dogs is, by many, feared and hated solely on this account. Others, again, though naturally fond of dogs, yet dare not indulge in the pleasure of their association, from the dread that, at some future time, these groundless fears may be realized; for surely it is not too much to call these fears groundless, when it is known that no dog can become mad from fright, anger, pain, or illness. Nothing but the actual *bite* of certain animals in a

rabid state can produce the disease ; and even should a dog become so *bitten* unknown to his owner, or when it is known that he has actually been endangered, still there is no real necessity for dread or for any thing more than common caution. So little danger is there from the first stage of the complaint, that I should entertain no fear while living in the same room with half a dozen dogs, all duly inoculated with rabid virus. The slightest degree of attention will always detect some peculiarity in the affected dog's manner—some departure from his usual habits: and this may be observed one day at least, commonly two days, before the more active symptoms commence, or before the most mischievous cases show themselves in a dangerous point of view. But, in a great number of the cases that occur, no mischievous disposition at all appears towards human persons through the whole complaint, except it is called forth by opposition and violence ; which consideration tends to reduce the danger still more materially. It ought, likewise, in no small degree to lessen the dread and fear of this malady, that, even when the worst has happened, and a human person has been unfortunately bitten by a rabid animal ; still that a ready, simple, and efficacious remedy is at hand, the application of which is attended with little inconvenience, while the consequences are certainly productive of all the safety that can be wished for.

Rheumatism.

THERE is no disease, except distemper and mange, to which dogs are so liable, as to a rheumatic affection of some part or other of the body.

Rheumatism presents almost as many varieties in dogs as it does in man ; and it has some peculiarities that are observed in the dog only. One very extraordinary one is, that rheumatism never exists in a dog without its affecting the bowels ;

that is, whatever part of the body becomes rheumatic, either an active rheumatic inflammation will be found to exist in the bowels also, or they will be attacked with a painful torpor: and, in either case, costiveness will be commonly present. The most usual form of this complaint is one which is very similar to the human lumbago. In this case a dog is, in general, seized with a partial or total loss of the use of his hind legs; his back, particularly about the loins, appears tender and painful to the touch. He screams on being moved; his belly is hot to the touch; his bowels are costive, and appear tender and painful. The nose is hot also, the mouth dry, and the pulse considerably increased in frequency. Sometimes the paralysis is not confined wholly to the hinder legs, but the fore legs are partly, or completely, paralysed, and helpless also. It seldom attacks the smaller joints, but confines itself to the trunk and upper portions of the extremities: neither does it wander, as the human rheumatism, from place to place, but usually remains where it first attacked.

A certain prognostic of the termination of this acute type of the complaint is very difficult to form; for, in some cases, the limbs recover themselves very speedily, in others more slowly: while, in other instances, the paralysis remains through life, and, when confined to the hinder extremities, the animal drags them after him as long as he lives, or gets the habit of carrying them completely from the ground by the strength of his fore quarters. When the paralysis is universal, the chance of perfect recovery is less than when it is partial; though, from this also, dogs do now and then recover by active and judicious medical treatment. It is to be remarked, however, that after the recovery appears in other respects complete, a considerable weakness sometimes remains in the loins and extremities; but more particularly it may be regarded as a rule from which there are few deviations, that, when a dog has once had rheumatism, he will be peculiarly liable to it again on the access of cold.

There is another variety of rheumatism that seems to be com-

bined with a spasmotic affection, and which peculiarly affects the neck, occasioning swelling, stiffness, and extreme tenderness of the part. Sometimes also it affects, at the same time, one or both fore legs; but even here the attack on such distant parts appears to be more symptomatic than idiopathic, for the bowels are always affected, and it happens invariably, that, when they are relieved, the violence of the complaint is always mitigated in the limbs or neck. I have not found any one kind of dog to be naturally more prone to rheumatic affections than another; all seem alike subject to them: but those become most so that live most artificially, and such as are usually kept warm, but become accidentally exposed to wet or cold. The spring produces more instances of this disease than any other time of the year, probably from the prevalence of easterly winds at that season*.

The *treatment* of canine rheumatism should be as follows:—In every instance the bowels must be particularly and promptly attended to; and in no way does this indication seem better effected than by first placing the animal in warm water, and keeping him there for a quarter of an hour, at the same time rubbing him well over the affected parts. When taken out, wipe him dry; wrap him well up in a blanket, and place him within the warmth of a fire: first, however, giving him the following:—

Tincture of opium.	20 drops
Vitriolic æther	30 drops
Castor oil	1 ounce.

This quantity is proper for a middling sized dog, and may be increased or diminished in strength at pleasure. Should it not be found to operate as a laxative, a clyster should be

* Dogs, particularly such as are closely domesticated, become peculiarly open to atmospheric impressions. Any sudden change of weather, especially from a dry to a moist state, may be seen in the depressed countenance and listless manner of many of them. Many others cannot be exposed to an easterly wind for a quarter of an hour even, without becoming affected with rheumatism.

likewise administered ; and, in default of that acting also, give the following ball, increasing or diminishing its size and strength according to circumstances :—

Submuriate of mercury (<i>calomel</i>).....	4 grains
Powdered opium	quarter of a grain
Oil of peppermint.....	1 drop
Aloes	1 dram.

Make into a ball with lard or butter, which give ; and, if necessary, repeat every four hours till the bowels are perfectly open ; and keep them gently so by mild aperients for several days after, or until amendment takes place. The affected parts should also be embrocated two or three times a-day with either of the following :—

Oil of turpentine	2 ounces
Liquid carbonate of ammonia (<i>spirit of hartshorn</i>).....	2 ounces
Tincture of opium (<i>laudanum</i>).....	2 drams
Olive oil.....	2 ounces :

Or,

Cajeput oil	one part
Soap liniment (<i>opodeldoc</i>)	two parts.—Mix.

The warm bath should be repeated at intervals of one or two days, according to the quickness or slowness of the amendment ; moderate feeding only should be allowed. Sometimes food is altogether refused ; more frequently the animal is as willing to eat as at other times ; and it is not uncommon, in some of these cases, from a morbid sympathy of the stomach and bowels, for him to be more than usually voracious.

When the paralysis, occasioned by rheumatism, continues to deprive the limbs of their mobility, I have experienced some good effect from electricity, in others from mercurial frictions, and in some cases from blisters along the spine. When the hinder limbs only are paralytic, a very large pitch plaster, applied over the whole loins, reaching to the tail, and covering the upper parts of the thighs, should continue to be worn for two months, or even longer. In a few cases I have experienced benefit from the cold bath ; but the warm bath, though the most admirable remedy during the rheuma-

tic attack, I have never found to give any relief to the future paralysis.

Rickets.

A LIFE of art appears to subject many of the smaller races of dogs to the same deficiency of earthy matter in their bones as is witnessed in the human infant, and puppies are often born ricketty, or become so as soon as they begin to walk. Pugs, and the smaller terriers, are very liable to it. There is likewise a breed of larger terriers, in which the deformity is hereditary, and is cultivated; these are called *wry legged*, and are used for hunting rabbits, &c. &c. The affection attacks all the joints of the extremities, which it enlarges, probably from a sympathy in the constitution to make up, by bulk, what the bones want in ponderosity, but which is not effected; for, deprived of their earth, they yield to the superincumbent weight, and the cylindrical ones particularly become crooked. Cleanliness, good air, free exercise, and wholesome food, will commonly prevent it in the future breeds of such dogs as have shewn a disposition to it. As a cure, an invigorating diet added to these, with the occasional use of tonic bitters if the appetite fails, or the digestion should appear defective, will answer the intention.

Scirrhous.

IN the human subject this is considered as the primary stage of cancer; but dogs, though very subject to scirrhous, are but little liable to cancer. It is true these scirrhous tumours very frequently ulcerate, and such ulceration proves obstinate, and spreads; but it reaches only through the extent of the gland, and very seldom attacks the surrounding

parts, or puts on the true carcinomatous character.—See CANCER.—On the contrary, it may be regarded as mild in its character, little painful, and not attended with any particular foetor in the discharges made therefrom. It is also worthy of remark, that an examination of the scirrhous tumours of the dog presents a different appearance from those of the human subject. In the former, instead of exhibiting various strata of morbid matter, the innermost of which is the most condensed, there are seen, in the canine tumours of this kind, appearances more resembling a collection of glands, or of firm hydatids; each of which exhibits, on a section of it, a distinct diseased process.

Scirrhous indurations appear to be principally occasioned by the same causes that tend to the production of mange; namely, vitiated or superabundant secretions of some parts, the effect of a general fulness of habit striving to relieve itself. These tumours are, therefore, most frequent among dogs who are hotly kept, suffer much confinement, and are over-fed.

Scirrhous Teats of Bitches.—The mammary glands are very usually the seat of scirrhous tumours, particularly among those bitches who have not been allowed to breed. They are also common to those of gross plethoric habits, and to such as live a confined life, and are too full fed. The origin of these tumours may be very frequently dated from an inflammation in the mammae, from retained milk when the pups have died; or from the coagulating of that milk which forms, by sympathy, about the period a bitch would have pupped, provided she had been allowed to breed. A small nucleus, or kernel, not larger often than a pea, is first felt within the gland, which sometimes increases fast; at others it enlarges very slowly, appearing to give little uneasiness, until its weight makes it prove troublesome. If the tumour is not dispersed in this state, sooner or later, it proceeds to ulceration; immediately previous to which, one or two small shining vesicles form on its surface, which break, and ooze out an ichor or glairy fluid, but which seldom, in this stage,

produce a healthy matter. The first opening often heals up, but others follow; and, in the end, two or three, or more, appear at the same time, which, breaking in different parts, are soon licked into one sore by the animal; and although the ulceration does not spread rapidly, or put on the virulence of human carcinomatous ulcerations, it seldom heals afterwards, but, at length, wears down the animal by the continued discharge.

While the tumour is externally whole, and is throughout indurated, without hydatid-like vesicles, it may be, now and then, dispersed by the frequent application of active discutents, as

Muriate of ammonia (<i>crude sal ammoniac</i>)	one ounce
Acetic acid (<i>vinegar</i>)	four ounces.

Bathe with this three or four times a-day. Brandy and water, or vinegar, or common salt and water, are also good discutents.

In some cases, the repeated application of leeches forms, of all others, the best mode of treatment. In others, the means recommended for the cure of bronchocele prove useful, with the addition of sarsaparilla. During the attempts at discussing these tumours, a repetition of the causes producing them should be carefully avoided, such as a sympathetic repletion of the teats from coagulated milk, and the obstruction to its passing off, by depriving them too early of their young; but particularly by avoiding whatever tends to produce repletion, as confinement, over-feeding, &c. &c.

As, however, all means at dispersing these tumours are very apt to fail, and ulceration almost invariably occurs, it follows that extirpation, or the cutting of them out, is the remedy usually necessary to be resorted to for their complete removal. This operation may be safely performed, in every instance, with only common precautions: out of innumerable cases, on which I have operated, I never lost one. It is, however, in general, prudent to let the tumour increase, till; by its weight, it becomes pendulous, and detached from the

abdominal muscles, when it may be dissected out without any danger of opening the peritoneum, or of wounding large arterial branches. In dividing the integuments, care should be taken to destroy but little of their surface, except such as may be actually diseased; for, by detaching the tumour neatly from the integuments by a careful dissection, and by not removing integuments and all, the wound much sooner closes, and the cicatrix which follows is necessarily smaller, and less corrugated. As the excision proceeds, the blood vessels should be taken up; and, when the tumour is removed, two or three stitches should be introduced into the opposite edges of the skin to bring them together; by which the cure will be considerably expedited. These stitches, however, ulcerate out in three or four days; but they usually have, by this time, performed their office, and the remaining wound will require only common dressing, with the addition of bandages sufficient to prevent the dog from interrupting the healing by his nose and tongue.

Wens and Scirrhous Tumours are not confined to the teats only; nor are dogs without them, as well as bitches. There is scarcely a part of the body but what I have seen these wen-like enlargements on; the treatment of which in nowise differs from the plans already laid down.

The *Testicles* in dogs are sometimes also the seat of scirrhous induration. In such cases, one or both of these glands become hard, painful, and rather tender, with a shining fulness of the scrotum. If the tumour does not readily give way to the application of the active discutients that are recommended for the mammary scirrhi of bitches, try the effect of a regular administration of burnt sponge, as recommended under *bronchocele*. In some cases, mercurial frictions have succeeded; but, in default of these, proceed, without delay, to *castrate*, to prevent the disease from extending up the spermatic chord.—*See CASTRATION.*

Scrotum, inflamed.

AN acute inflammatory affection, not unlike human erysipelas, often falls into the scrotum, or *bag*; of dogs, which is, in fact, a species of acute mange. It proves very distressing and painful to the animal, from the extreme irritation, heat, and swelling that always accompany it. It sometimes proceeds to superficial ulceration, becomes raw, and produces pus; at others, it remains red and tumefied. Although it is a mangy affection, yet, like that which attacks the head, it must be deprived of its irritable and highly inflamed state before any of the *specific* applications detailed for the cure of mange can be borne. The cure, therefore, should be begun by bleeding, purging, and cooling alteratives, with sparing food. The parts themselves may be dressed with the following, taking care to prevent the dog from licking them, which only aggravates the complaint, robs the parts of their remedy, and may injure the health by the lead being received into the stomach:—

Superacetate of lead (*sugar of lead*)..... 10 grains
Spermaceti ointment 1 ounce.—Mix.

After the scrotum has been deprived of its more irritable state, proceed as directed under mange.

Setons.

SETONS are artificial drains to the constitution, either to lower it generally, or to draw a deposit or a secretion of matter from one part to another. Country farriers and grooms make setons by piercing the skin through with a red hot iron; but this is barbarous, unattended with any superior advantage, and leaves a large scar. The proper mode of performing the operation is by means of a seton needle, which is a well-known instrument, not unlike a packing

needle, but three times as broad. This, being armed with a skain of thread, or a piece of tape, about six or eight inches long, is passed through about two inches of the skin, commonly of the neck, though any other part may very properly have a seton placed in it if requisite. The needle is then removed, and the tape suffered to remain, either tied end to end, or a knot may be made at each end to prevent the tape from coming out.

Setons may be beneficially used in a variety of cases, as canker, mange, diseased eyes, fits, &c. &c.; but their most general application is in distemper, in which they are very commonly used, but not, I think, in many instances with the benefit expected from them.

Sickness, excessive.

THE stomach sometimes takes on a disposition to reject every thing taken into it. Various causes may produce this; such as too strong an emetic, which will sometimes occasion incessant vomiting for two or three days after it has been taken. In such a case, give every now and then, or after each vomiting, a few drops of laudanum in a little gravy, gruel, or rice water. In instances of frequent sickness, arising from a weakened stomach, *boiled milk* will sometimes remain when every thing beside is rejected. In such cases, the bitter stomachics should also be tried, as colombo, camomile, and gentian, with the addition of very small doses of opium.

A foul stomach, as it is called, shews itself also by frequent sickness. Indigestion, or worms, or more frequently bile, entering the stomach by inverted peristaltic motion, may be the origin of such nausea. In cases of indigestion, an emetic should be first given; and then stomachics may properly follow. The sickness arising from worms may also be treated in the same way, concluding with a course of worm remedies.

Bilious vomitings may be known from the bile appearing with the matter brought up. When this kind of sickness is not accompanied with inflammation, give an emetic also, and then a mercurial purgative: but, when the sickness is incessant and distressing, it shews there is bilious inflammation:—*which see.* The most urgent and continued vomitings arise from the action of poisons, and from idiopathic inflammation of the stomach.—*See these heads.*

Spasm.

By spasm is understood an irregular motion in the muscular fibre, occasioned usually by some excitement on the sensorium. It may be partial or general. When general, it is usually called convulsion. Dogs are very subject to spasm from a variety of occasional causes. Spasm is also the usual accompaniment of several idiopathic diseases. Rheumatism produces spasmodic affections of the bowels, and often likewise of the neck, fore extremities, &c. Distemper is also a very fertile source of spasm, sometimes in the form of universal or partial twitchings, like St. Vitus's dance in the human; sometimes in bowel affections, and sometimes in general convulsion. In rabies, spasmodic contractions are very common. Spasmodic colic is not unfrequent in dogs; it also affects the bowels of puppies in a very particular manner sometimes.—*See COLIC.*

Cramp, which is the familiar term among sportsmen for spasm, occasionally seizes the limbs suddenly, attacking first one and then the other. Tetanus, or locked jaw, is also a spasmodic affection.

The best external antispasmodics are the warm bath, with close confinement in flannel afterwards. In some cases, an extraordinary degree of warmth has proved useful, with volatile embrocations applied to the pained parts. Internally, the following may be given:—

Æther.....	20 to 60 drops
Tincture of opium (<i>laudanum</i>)	20 to 60 drops
Camphor.....	3 to 6 grains.

Mix these together, and give, in a table-spoonful of ale; or of wine and water, according to the urgency of the symptoms. No fear need be apprehended from an over-dose of opium; in these cases the analogy between the human and brute does not hold good in this instance: a dog will bear five times the quantity of opium that a human person could. When spasm affects the bowels, sometimes much benefit arises from clysters with a dram of laudanum in each.—See **COLIC, SPASMODIC.**—Warm bathing, as before noticed, should never be omitted as a remedy in general spasm; but, in some cases of long-continued spasmodic affection, more purely paralytic, as in the twitchings arising from distemper; tonic remedies, with cold bathing, are more proper. Extensive bleeding has relieved some occasional spasms; and other cases have been benefitted by the treatment detailed under the head **EPILEPSY.**

Spaying.

THIS is a cruel and commonly an unnecessary operation, which is frequently practised to prevent inconvenience to the owners: but humanity should forbid its being resorted to, except in cases where the omission of it would endanger the life, as when some peculiarity occurs that would prevent a bitch pupping with ease and safety; or when she has been connected with, and is found to be breeding by, a dog much larger than herself. In this case, as she would probably die in labour, it is not improper to remove the puppies, at three or four weeks advance of pregnancy. The operation is performed by making an opening in the flank of one side, when the ovaria, being enlarged by pregnancy, are readily distinguishable, and may be drawn out and cut off, first one and

then the other, securing the ends by a ligature lightly applied to each surface, leaving the threads without the wound. Farriers often apply no ligature, but content themselves with simply sewing up the wound, and no ill consequence seems to ensue. Bitches, after they have been *spayed*, become fat, bloated, and spiritless; and commonly prove short lived. Nature usually punishes any considerable deviations from her common laws; and it is observed, particularly among animals, that when the great work of propagation is artificially stopped, particularly in the female, she ceases to feel Nature's protection, and becomes diseased.

Stomach, inflamed.

See INFLAMED STOMACH.

The Stone in Dogs.

THIS, though an uncommon complaint, sometimes however does occur. I have not less than forty or fifty calculi by me which I took from a *Newfoundland* dog, after his death, occasioned by the obstruction to the passage of the urine by means of these stones. Death had already happened before I was called in, or probably relief might have been afforded by an operation. I have likewise witnessed a few similar instances of calculous concretions within both kidneys and bladder. When a small calculus obstructs the urethra, and can be felt, it may be cut down upon and removed with safety; or a catheter, firm bougie, or sound, may be introduced, and the stone pushed again into the bladder.

But it must be remembered, that the urethra of the dog, in passing from the bladder, proceeds nearly in a direct line backwards; and then, making an acute angle, it passes again forwards to the bladder. It must be, therefore, evident that,

when it becomes necessary to pass a catheter, sound, or bougie, into the bladder, it must first be passed up the penis to the extremity of this angle: the point of the instrument must then be cut down upon, and, from this opening, the instrument can be readily passed forwards into the bladder.

St. Anthony's Fire.

DOGS are subject to two inflammatory affections, not unlike to human *erysipelas*. The one attacks the head, and is described with MANGE, and with TUMOURS also. The other affects the scrotum, and may be seen under INFLAMED SCROTUM. Until the diseases of dogs are more clearly defined, these may both of them be considered as an acute state of mange, or integumental inflammation. They both depend on plethora or repletion, and are both removed by such means as deplete the system and lessen arterial action.

St. Vitus's Dance.

An irregular action of the muscular fibre now and then occurs, that very much resembles *chorea sancti viti*. That twitching which remains after distemper sometimes, resembles it very intimately. Other causes will also produce a similar appearance; all of which are detailed under SPASM.

Styptics.

See ASTRINGENTS.

Surfeits.

WHAT is known by the name of a *surfeit*, is nothing more than a more irritable variety of mange. Thus, when a sudden inflammatory eruption appears over the integuments of the body, with the usual accompaniments of great heat and redness, it is termed a surfeit. When, also, a number of dry bare blotches present themselves, without much heat or redness, they are called the same. These inflammatory states of the skin are very commonly the effect of some sudden excitement in the habit; thus bitches, after pupping, frequently break out into extensive eruptive spots or inflamed patches; sometimes accompanied with ulceration also. Similar appearances occur often to dogs after distemper, or from a removal from a spare to a very full diet without preparation. The proper treatment is detailed under MANGE.

Swellings.

See TUMOURS.

Tailing of Puppies.

See CROPPING.

Teats, swelled.

See BREEDING, SCIRRHUS, GLANDULAR SWELLINGS, and TUMOURS.

Testicles, diseased.

SOMETIMES dogs are attacked with a redness and swelling of the scrotum or bag, which is nothing more than a variety of acute mange, and is treated of under that complaint, and also under SCROTUM, INFLAMED. But, sometimes, the testicles themselves may become enlarged and indurated, which is a much more serious disease.—See CASTRATION and SCIRRHUS.

Tetanus, or Locked Jaw.

IT is remarkable, that although dogs are very subject to various spasmotic affections, yet to that called tetanus, or locked-jaw, they are so little so, that I never met with more than three cases of it among many thousands of diseased dogs. These are, however, sufficient to establish the susceptibility of the dog to the complaint. Two of these cases were *idiopathic*, one being apparently occasioned by exposure to cold air all night: in the other, the cause was obscure. The third was of that kind called *symptomatic*, and arose from external injury done to one of the feet. In each of these cases the convulsive spasm was extreme, and the rigidity universal but not intense. In one case the jaw was only partially locked.

Both warm and cold bathings were tried; large doses of opium and camphor were thrown up in clysters; and, in one case, these articles were poured down the throat also. The spine of one was blistered. Stimulating frictions were applied to all, but in neither case with any salutary effect.

In the hog and sheep, tetanus is very apt to follow wounds of the head; but it is, I believe, invariably fatal in both, and it is remarkable, that, in these animals, the tetanic attacks are periodical and not constant.

Throat, swelled.

See NECK, SWELLED ; and BRONCHOCELE.

Tumours.

DOGS are subject to a variety of swellings or tumours. If we commence our account with the head, we shall find that it is the subject of a peculiar tumefaction, not very unlike human erysipelas. In dogs of a gross, full habit, from natural plethora, or from over-feeding, the head will sometimes become suddenly enlarged, hot, tender, and painful, accompanied with thirst, quickened pulse, and every mark of fever. In a day or two a general breaking out takes place, which proves to be a kind of acute mange.—See MANGE.—In distemper also, a tumour sometimes forms upon some part of the face, generally about the lower jaw, which soon breaks into an open and bad ulcer.—See DISTEMPER.—The flap of the ear is also subject to a very considerable tumour, containing serum.—See TUMEFIED FLAP OF THE EAR.

The neck is likewise subject to tumefactions. The principal of these cases arises from an enlargement of the glands on each side of the windpipe, and is called BRONCHOCELE ; which see. The neck will sometimes also become swollen from rheumatism.—See RHEUMATISM.

On the body, glandular tumours, or wens, will likewise form in various parts: there is hardly any situation in which I have not seen them, and extracted them from.—See CANCER and GLANDULAR SWELLINGS.—But the most frequent glandular tumours, are those that form in the teats of bitches.—See SCIRRHUS.—In old bitches, particularly in spayed ones, there often appears a tumour, or enlargement, on each side the back about the loins ; which, though it elevates the skin externally, yet is evidently more deeply situated. These swellings arise from large accumulations of fat about the

ovaria, and are best kept down by exercise, moderate feeding, and alteratives.

Ulcerous Affections.

DOGS are subject to ulceration of various parts of the body, dependent on very different causes. Cancer, which is the worst ulcer we are acquainted with, is but little common in the dog. Those cases, however, in canine pathology, that do approach its character, are noticed under the head **CANCER**. A very malignant ulcer sometimes breaks out in the lips, face, or neck, in distemper, and is there noticed. In virulent canker, the internal, and sometimes the external ear also, become attacked with extensive ulceration. I have seen it proceed so far, in these cases, as to destroy the dog. The eyes become very commonly ulcerated in distemper; and as commonly, when the distemper is cured, they reinstate themselves, although the ulcerative process was very considerable.

Glandular parts in dogs are very liable to ulceration; the most common among which are the teats in bitches.—See **SCIRRHUS**.—The vagina, sheath, or bearing, and sometimes the womb also, are found to be affected with a morbid ulcerous state, which is very usually accompanied with a fungous excrescence, from which blood exudes, or a bloody ichor. This disease participates more of the nature of cancer than any other to which dogs are generally liable.—See **CANCER**.

The penis is likewise the subject of an ulcerous affection, which is also commonly accompanied with a spongy fungous excrescence, exuding a bloody ichor: but it does not erode the neighbouring parts, and appears to partake more of the nature of a vascular warty substance, than that of cancer.

This fungous excrescence on the penis is often mistaken for a disease of the kidneys or bladder. A few drops of bloody fluid appear now and then to come from the dog; and, as in

the act of making water, the last effort squeezes the fungus, and forces a drop or two at that time, so it is concluded, that either the urethra, or the kidneys, or bladder, is affected. But, in these cases, if the dog is held, and the prepuce stripped all the way down, so as to expose the penis throughout its whole length, there will generally be found one or more large fungous knobs, from which this bloody secretion proceeds.

The *cure* consists in removing every one of these excrescences, carefully and completely, with the knife, leaving no part of the base or pedicle of each. Having done this, sprinkle the excised part with a little alum in fine powder; and, unless the excrescence has been very considerable (when it will be necessary to remove the prepuce every day to prevent an union of it to the penis), the rest may be left to nature. In very slight cases, where these fungi have appeared as warts only, which is not uncommon, I have removed them by merely sprinkling them daily with powdered savine three parts, crude sal ammoniac two parts. Other ulcerous affections are noticed under the head WOUNDS.

Urine, bloody.

BITCHES seldom have any disease of the bladder or kidneys. When, therefore, there is any bloody issue from the parts of generation in them, it commonly proceeds from some affection of either the vagina, or womb. Such appearances may be the effect of a *polypus* ;—which see. Or they may arise, which is also more probable, from a cancerous affection.—See CANCER, and ASTRINGENTS.

In dogs, also, bloody urine is not uncommon. In them, the neck of the bladder becomes sometimes injured, or a part of the urethra ruptured, from brutal persons forcing them from bitches in the copulative act. In such cases, during the active state of inflammation, bleed at the neck, and foment the

part. When that has subsided, the following balls will commonly effect the restoration of the parts:—

Catechu, called <i>japan earth</i>	2 drams
Gum arabic, powdered	3 drams
Gum myrrh.....	half a dram
Gum benjamin	half a dram
Balsam Peru	half a dram.

Mix with honey, into twelve, fifteen, or twenty balls, according to the size of the dog; and give one night and morning.

A more frequent, but, to persons unacquainted with the diseases of dogs, a more obscure source of bloody urine, arises from fungous excrescences on the penis.—See ULCEROUS AFFECTIONS, and ASTRINGENTS.

Vaccination of Dogs.

See p. 134.

Venomous Bites.

See POISONS.

Vermin.

See p. 177.

Warts in Dogs.

IT is not uncommon for dogs to be troubled with warts on some parts of the body; the most frequent of which are the lips, the penis, and the prepuce. These excrescences may be either cut off, or, when they exist in clusters, they may

be sprinkled with equal parts of crude sal ammoniac and powdered savine; which commonly effects their removal.

Washing of Dogs.

THIS becomes, under some circumstances, a very necessary practice, and, when judiciously managed, is salutary: but, when otherwise, it is productive of more mischief than persons are aware of. There is not a more fertile source of disease to dogs, than suffering their coats to remain wet after washing or bathing. In the first place, it subjects those who are unused to it to colds, which end frequently in distemper, inflammations, or asthma; and in those to whom the practice is common, it is scarcely less pernicious; for, though it may not occasion immediate illness, it nevertheless, in the end, frequently produces canker or mange. It may be observed, as a proof of this, that dogs who often go into the water are seldom without some affection of this kind. Canker, particularly, is almost confined to dogs who swim much, or who are washed often, without being properly dried afterwards: it should, therefore, be most attentively observed, when dogs are washed, that they are also carefully dried after it. Very small dogs, for this purpose, may be wrapped up in a blanket: large dogs, after being well rubbed, may be permitted to run into a stable among clean straw, which is a very excellent means of drying them, and, from its warmth, a very safe one.

It should be remembered that, in ascertaining the proper warmth of the water for the washing of dogs, the heat, which appears trifling to the hand of a servant always used to dabbling in suds, will scald an animal unused to any thing but cold water. Washing should not be repeated oftener than once a week, even with the best care; for it certainly promotes mange and canker. Rubbing the skin with a flannel and dry bran is better. In slight rednesses of the skin,

washing with common gin will often remove them. In similar cases, yellow soap well rubbed in, and then washed clean off, is also a good practice.

But, however hurtful a too frequent system of water washing may be to healthy dogs; to diseased ones, both hot and cold bathing are of the greatest service.—See BATHING.

Wens.

See SCIRRHUS.

Worming.

THE antients were fertile in errors with regard to the animal economy; gradually, however, these mistakes gave way to the lights of reason and science. Some few are, nevertheless, still cherished, with a religious veneration, and, what is more remarkable, by the judicious and well-informed likewise. A prominent instance of this appears in the subject before us, that of a supposed worm existing within the under surface of the dog's tongue. Long before the time of PLINY, such an animal was supposed so to exist, and which erroneous notion appears to have been originally derived from observing that canine madness produced a swelling of the mouth and tongue, which naturally led to an examination of these parts; when the discovery of a prominent ligamentous substance was readily converted into a worm, which they named *lytta* *, and which they as readily conjectured to be the true

* “Est vermiculus in linguâ canum, qui vocatur *lytta*, quo excepto, “infantibus catulis, nec rabidi furent, nec fastidium sentiunt.”—PLINII, *Hist. Nat.* lib. xxix, c. 32. Paris, 4to, 1685.

In

cause of the disease. It may be remarked here, that it is only an offset of this error that attributes another origin of madness to the tooth-ache, occasioned by supposed *maggots* within the teeth.

I feel almost ashamed to contend this point gravely; but when it is considered that elegant and learned writers still advocate, if not the *existence* of a *worm* under the dog's tongue, at least, the presence of a *something*, the removal of which certainly, in their opinions, proves a prophylactic, and either altogether prevents the animal at any time going mad, or otherwise renders him wholly incapable of mischief in case he should become so, it appears necessary.

Anatomy has demonstrated, that many pendulous organs have doublings of the surrounding skin, which doublings are often strengthened by interposed ligamentous substances purposely placed there still further to strengthen the duplication. In this way is the tongue of man, and most animals, secured in its situation from being forced down the throat by accident or convulsion. This *frænum*, or bridle, immediately appears prominent on opening a dog's mouth, and elevating his tongue, where it may be seen extending from the root almost to the apex. On the slightest inspection, its use as a bridle and support to the lengthened organ must be apparent; and it must be torturing conjecture to devise any other purpose for which it can be placed there. In the operation called *worming*, the projecting skin is divided with a lancet, which

In the Latin Poets on the Chase, we also meet with the same idea:—

- “ Plurima per catulos rabies, insutaque tardis
- “ Præcipitat cætale malum: sic tertius ergo
- “ Anteire auxiliis, et primus vincere causas
- “ Namque subit, nodis quâ lingua tenacibus hæret
- “ (Vermiculum dixeré) mala atque incondita pestis.”

GRAT. *Talisci Cynegeticon*, 383.

GESNER informs us, however, that the Greek medical writers were better informed, and doubted whether this ligamentous substance was a worm or not.

exposes the interposed ligamentous matter, called *a worm*; on the extraction of which (by slitting its cuticular envelope behind it, from one end to the other), whole and unbroken, depends the virtue of the operation. One end of the ligamentous substance being raised, it sometimes is, at a fortunate or dextrous extraction, at once stripped off to the other end; the violence made use of in doing which, puts the substance on the stretch, so that, when removed from the mouth, it necessarily recoils by means of its elasticity, and which natural occurrence is even still adduced as a proof, with some of the credulous, that it is itself a vermicular animal.

Few well-informed persons, however, now believe so truly ridiculous a matter as that this is or can be any thing of the worm kind, or that it can possess any *independent* life; but many well-informed sportsmen still believe that the extraction of this substance, by the operation just described, called worming, will render the dog perfectly harmless in case he should become rabid, or go mad, in future.

In the rabid variety called dumb madness, I have had occasion to show that the disease appears to consist of a specific attack on the bowels principally, and that, conjoined with this, and apparently as a consequence of it, there is usually present such a tumefaction of the parts around the after mouth, and roots of the tongue, as frequently wholly incapacitates the dog so affected from biting. When this takes place in a dog which has been wormed, his harmless disposition is erroneously attributed to the previous worming; but nothing is said or thought of the innumerable instances which occur of dogs otherwise affected and proving mischievous which have been duly operated on by worming. Instances of this description fell under my notice continually, during the prevalence of rabies. The incapability of the dog to bite, and his having been wormed, are circumstances that must often happen in the same animal, seeing that dumb madness is a very usual form of the complaint, and worming a very common practice among sportsmen: but such circumstances are wholly independent of each other, and they can-

not necessarily be otherwise. The removal of a portion of skin from a dog's mouth can no more influence him in this particular than the removal of a portion of his tail: neither can it act mechanically, as has been supposed, by taking off the restraint from the tongue; for the affection that renders the dog harmless consists in a tumefaction, of a specific kind, around the base of the tongue, extending far beyond its frænum or bridle. Worming, therefore, I do not hesitate to state, is a custom founded on ignorance and misapprehension, when performed as a preventive of the consequences of madness.

Worming is also practised to prevent *gnawing*, which young dogs are very prone to do, first from a playful habit, and next to favour the removal of the present and the growth of the future teeth. In human infants, also, the same habit is observed, and from the same cause. In this case, also, worming only prevents gnawing, by making the mouth sore; for, as soon as the wounded part is well, the dog recurs to the practice again.

Worms.

Dogs are subject to four intestinal animals, three of which belong to the *vermes*, or worms, and the fourth, I am disposed to think, is the larva or grub of one of the *musca*, or fly race, perhaps of a species of *œstrus*. In size, figure, and colour, it resembles a small larva, maggot, or gentil of the common flesh fly, having a dark head, between the palpi of which its mouth is situated. I am totally unaware to what chrysalis it afterwards changes, neither am I better informed by what means it enters the animal. Were it like the larva *musca carnaria*, intended to live on animal fibre, it would, by its ravages, destroy the body it entered, and, as a chance visitor, the high temperature of the animal body would soon destroy it. If it belongs to the *œstrus*, it is remarkable that

its attack should so long have escaped the observation of naturalists. It is not, I believe, very hurtful, nor is it very common in dogs.

Of those worms which live and breed within the dog, and may be considered indigenous to him, the *Tænia*, or tape-worm, is the most prejudicial, and the most difficult to remove *. I have known four or five hundred joints (each a distinct animal) passed by a dog, whose united length would encircle his body many times. Sometimes they become coiled up into a ball, which thus forms an impenetrable obstruction within the intestines, and destroys the dog.

The *Teres*, or long cylindrical worms, resembling earth-worms in figure, but of a whitish colour, are the most common to dogs, and, when existing in great numbers, particularly in puppies and young dogs, often prove fatal by the convulsions they occasion. Their natural situation is within the intestines, but they sometimes crawl from them into the stomach, and are then brought up by the sickness they occasion.

The *Ascarides*, or small thread-worms, likewise occasionally infest dogs, residing principally within the rectum. They produce an intolerable itching in the parts behind, to relieve which, dogs troubled with them are seen continually drawing the fundament along the ground. Except by the irritation occasioned, which, when excessive, may weaken, they do not appear to do much internal injury.

The constitution of some dogs appears particularly favourable to the generation of worms ; for, destroy them as often as you will, they soon return again. Puppies, during every stage of their growth, are very liable to them. In many, the increase of the body appears checked by their ravages. The presence of worms, when they exist in considerable numbers, is easily detected ; for such a dog has usually a

* It is remarkable how universal is the attack of this parasitic animal: when roach and dace are observed to swim near the surface of the water exhausted, and incapable of descending long together, if they become the subject of examination, they will be found, in most instances, affected with this singular worm.

slight cough, his coat stares, he eats voraciously, yet seldom fattens: his evacuations prove also a most unequivocal symptom; for they are, in such cases, peculiarly irregular, being at one time loose and slimy, and at another more hard and dry than natural. The belly likewise is often tense and enlarged. When very young dogs have worms, the first that pass are seldom noticed, for they seem to affect the health but little; but gradually, as they increase, purging becomes more frequent; and the animal, though lively, wastes, and his hip bones may be plainly felt. The growth likewise appears stationary, and in this way it is very common for him to continue, till a fit or two carries him off, or he dies tabid. In adult dogs, worms are less fatal, though, from the obstructions they form, they sometimes kill them likewise; and they always occasion a rough unhealthy coat, with a hot nose and foetid breath; and in both the young and the full grown, they very commonly produce epileptic fits. It does not follow, because no worms are seen to pass away, that a dog, who exhibits the other symptoms of them, has none: neither, when they are not seen, does it follow even that none pass; for, if they remain long in the intestines after they are dead, they become digested like other animal matter.

The *treatment* of worm cases in dogs has been like that of the human, and the remedies employed have been intended either to destroy the worms within the body, or otherwise to drive them mechanically, as it were, out of the bowels by active purgatives: but, as these latter means were violent (for, without the very mucus of the bowels, as well as the foeces, were expelled, no benefit was derived from them), so the remedy, in many instances, became worse than the disease. Many substances have, therefore, been tried, in hopes of destroying these animals within the body; and it is evident, that any thing that could certainly do this would be most important, as it would obviate the necessity of having recourse to the violent purgatives means heretofore employed.

For this purpose, substances which present small spiculi, or points, have been found the best adapted, effectually de-

stroying the worms by abrading their external or internal surfaces, without, in the slightest degree, injuring the patient. Either of the following recipes embrace these properties, particularly the latter, which I cannot too highly recommend :—

Cowhage (*dolichos pruriens*, LINN.)..... half a dram
Tin filings, made with a very fine file..... 2 drams

Or,

Iron filings, very fine..... 2 drams
A distemper powder, No. 1 (p. 146.)

Form either of these into four, six, or eight balls, and give one every morning; after which, a mercurial purgative will be proper. I have occasionally succeeded, in very obstinate worm cases, by moderate daily doses of Epsom salts*. Ascarides are best destroyed by terebinthinated or aloetic elysters. The tape-worm is not unfrequently removed by mercurial purges; but a still more certain remedy for this noxious guest is considerable doses of oil of turpentine, as two, three, or four drams, according to the size, age, and strength of the dog, given night and morning, mixed with the yolk of an egg, for a few days.

Wounds.

DOGS are liable to become wounded in various ways, and their wounds, however bad, are not, generally, much attended to, from an opinion that the animal's *tongue* is the best

* The obstinate disposition to generate worms, which some dogs possess, may be, in some instances, checked by the daily administration of common salt in their food: the use of which, however, should be persisted in no longer than is absolutely necessary, to avoid the tendency it might have to produce mange, unless this tendency is checked at the time by the administration of alteratives with the salt.

dressing. This is very questionable: in some instances, I am certain, no application can be worse to a wounded dog than his own tongue. Whenever dogs are at all inclined to foulness, as it is called, a sore, so licked, is sure to become mangy, and to be aggravated by the licking.

In all extensive and lacerated wounds, a stitch or two should be made with a large needle and thread, as it will reduce the wound; but, as such stitches soon ulcerate out in the dog, so the edges should be still further secured by slips of sticking plaster. A recent wound should be cleansed from the dirt, and then covered up: when it begins to suppurate, dress with any mild ointment. In thorn wounds, or others made with splinters, carefully examine that nothing is left within them; otherwise no attempts to produce healing will prove successful. The most common wounds in dogs arise from the bites of other dogs. Under such circumstances, should any suspicion arise that the dog was mad by whom the wounded one was bitten, proceed as directed under *rabies*. The wounds, arising from common bites, in general soon heal of themselves: if, however, they are very extensive, wash them with Friar's balsam, to prevent their becoming gangrenous.

Fistulous wounds, in glandular parts, often prove very obstinate. In such cases, means must be taken to get at the bottom of the sinus, and to raise a more healthy inflammation therein. This may be done either by injecting something stimulant into it, as a vitriolic wash, or by passing a seton through it. Some fistulous wounds, such as those in the feet and about the joints, will often not heal; because either the bones, or the capsular ligaments, are diseased. In these cases, the wound, in general, requires to be laid open to the bottom, and to be stimulated with oil of turpentine, or with tincture of Spanish flies, daily, till the foul diseased bone or ligament is thrown off, when a healing process will immediately commence.

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